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DOCUMENTS
OF THE
CITY OF BOSTON,
FOR THE YEAR 1874.

IN THREE VOLUMES.

VOLUME III.

CONTAINING DOCUMENTS FROM NO. 69 TO NO. 115 INCLUSIVE,

Published by Order of the City Government.



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CITY OF BOSTON.



ANNUAL REPORT
OF THE
TRUSTEES OF THE PUBLIC LIBRARY.

1874.

CITY OF BOSTON.

PUBLIC LIBRARY, July 10, 1874.

His Honor, Samuel C. Cobb, Mayor of the City of Boston:

SIR,—I have the honor to transmit to you, herewith, the Twenty-second Annual Report of the Trustees of the Public Library, prepared in obedience to the fourth section of the Ordinance of 1869, relative to the Public Library.

Very respectfully,

JUSTIN WINSOR,

Secretary of the Board of Trustees.

TWENTY-SECOND ANNUAL REPORT
OF THE
TRUSTEES OF THE PUBLIC LIBRARY.

In conformity with the requirements of the fourth section of an Ordinance concerning the Public Library, passed September 21, 1869, the Trustees have the honor to present to the City Council their Twenty-second Annual

R E P O R T,

being the fifth made under the new Ordinance, and including the results of administration for the year ending on the 30th April last.

The reports of the Examining Committee and of the Superintendent of the Library are herewith appended.

The Examining Committee appointed in conformity with the Ordinance, consisted of W.C. Collar, Esq., Dr. Thomas B. Curtis, Rev. Charles E. Grinnell, Hon. Francis B. Hayes, Hon. Geo. Lunt, with the President of the Board as Chairman. This Committee, appointed at the usual time, selected from citizens at large, was unable, from various personal engagements, to attend to the duties assigned them, until the month of June was nearly over. Their Report passes in review the administration of the Library as performing its functions of circulation and consultation, and examines the relations of the Superintendent and of the administrative force of the institution to the work of extending, so far as practicable, the uses of the Library to all classes of the popula-

tion. It is gratifying to the Board of Trustees that they speak in such a favorable manner of the whole system of management and its results.

Of the Superintendent's Report, hereto annexed, it may justly be said that, with its Appendixes, it furnishes the full account of the manifold operations of the Library during the year, and embraces in systematic arrangement the facts important to the public and to kindred institutions. With the addition of the Branches, the tabulations increase annually in extent and value, and are already recognized at home and abroad as among the best contributions to library statistics. A full examination of these pages is essential in order to obtain even in a moderate degree a comprehension of the nature of the work performed in the various departments of administration, and also of the character of its relations to the various communities which it now serves.

It is gratifying to state that all the recommendations with regard to the building made by the Trustees to the City Council have been substantially met; and that its safety from fire both from without and within is, so far as practicable, secured. When the house and grounds adjacent to the Library, purchased in 1872 as a provision needed for its extension, are used for the purposes required, still further security will be obtained.

The Branch service of the institution continues to perform its important and popular functions. During the past year the Roxbury Branch, in connection with the Fellowes Athenæum, entered upon its work, and by the annexation of Charlestown and Brighton the Trustees received as a portion of their responsibilities the charge of the free Libraries already established in those precincts. The regulations and by-laws controlling the principal Library and also the Branches already in operation, have been extended to the government of these accessions, and in time all the details of administration will

conform to one common system. The arrangements for proper supervision on the part of the Trustees and of the Superintendent have been carefully made, so that the necessary attention shall be given to the peculiar and separate necessities of the smaller libraries. In this connection it cannot be too strongly impressed upon these different communities now united as one whole under the general title of the City of Boston, that it is the earnest desire of this Board, as well as the best policy of the institution, that each Branch and local Library shall be so far the object of esteem and appreciation to the neighborhood to which it ministers, that it shall be the recipient of such measure of benefaction by gift or bequest as generosity may impel, with the certainty that every donation will be faithfully bestowed upon the object in the manner designated.

These popular arms of the Library, including the Lower Hall collection in Boylston street, now contain in the aggregate over 80,000 volumes, and they distributed to readers last year 553,129 books. The great consulting and reference Library in Bates Hall, numbering about 180,000 volumes, was used by 72,313 visitors, exclusive of the examinations made of the Patent Documents. This enormous aggregate of 625,442 of circulation and use includes ten months of the Roxbury Branch, and four months' administration of the Charlestown and Brighton Branches. The largest proportional circulation of books has been at the South Boston Branch, where each volume went out on the average a fraction over nineteen times.

To the total number of volumes in all the collections given in the last report, 209,456, there has been added during the year the unprecedented number of 51,094 volumes, an increase of nearly twenty-five per cent., making a grand total of 260,550 volumes. This is mainly due to the accession of the Charlestown Library, with its 15,788 volumes, of the Holton

Library at Brighton, with 11,037 volumes, and of the 12,057 volumes of the Barton Library. These additions in value and importance are not exceeded, if equalled, in the previous annual growth of the institution.

The purchase of the Barton Library, of which the details were given in the last annual report, has proved, on fuller examination, to have been even more fortunate than was anticipated. Aside from the great value of its Shakespearian treasures, the extent and variety of its rare works and of its noble specimens of printing and binding, will make it in the future one of the most attractive points of an institution which has heretofore enjoyed but few opportunities of placing upon its shelves works of similar rarity and value. It will properly be deposited in a room in the new fire-proof addition to the Library building now in process of erection, and to be completed in the late autumn.

The Superintendent of the Library has rendered an invaluable service to the institution and to the community in directing by means of the last Class List in History, Biography, and Travel, the attention of readers to a better order of books than the unassisted knowledge of the great majority of people would have attained. Those who simply read for amusement or occupation will find their objects equally accomplished by a higher grade of literature, if the books can be placed within easy reach. The increased application for better books, due to the last improvements of the modern catalogue, forms a most encouraging feature of the statistics of the free library service during the year just finished. The epigram applied to Dr. Johnson, that he was "a robust genius, born to grapple with whole libraries," finds its modern application in the much improved and speedier processes by which the unlearned, no less than the skilled reader, may easily ascertain the contents of the various departments of the Library.

In this connection, the Trustees are happy to announce that

the long and difficult work of cataloguing the Ticknor Library has been accomplished, and that the Index will go to press in the autumn. A suitable catalogue of so rich and important a collection of Spanish and Portuguese books will form an addition to the bibliography of those languages, most desirable to scholars on both sides of the Atlantic.

But these and other results are not attained without systematized and concentrated labor and skill. The Public Library, with its Branches, employs in the various departments of its work 103 persons. These are necessary to bring up the continuous record to date, to meet the daily demand upon the general resources of the institution, to continue the prompt production of the new books for the purposes of circulation, to provide immediate answer to the questions of inquirers, to do the steady solid work of the cataloguers, and to cover the multifarious calls of an organization which necessarily includes for the use of books a larger instrumentality than has hitherto been attempted.

The City Council have made the requisite pecuniary provision for such immediate addition to the building, as will not only suffice for the present necessities of the institution, but will conform also to the prospective needs of the future. The extension and enlargement of the south-west tower will give to the Library the accommodation temporarily required for its binding department, for working rooms for a portion of the staff now scattered among the alcoves and galleries, for the Superintendent and the Board of Trustees, for a fire-proof place of deposit for not only the Prince and Barton Libraries, but also for the card catalogues, and for the invaluable series of American, English, and French Patent Reports. This new erection will make absolutely safe from fire large classes of costly works, including many either not easily obtainable, or almost priceless from rarity, and which constitute no inconsiderable

part of the value of a collection rapidly becoming of national importance.

The statistics of the various reading-rooms show the results reached by this attractive service. So large an amount of intellectual activity has been attached to the apparently ephemeral form of periodical literary production during the past twenty years, that it not unnaturally holds out a strong inducement to readers to obtain by this means, by a moderate amount of exertion, the facts, theories and opinions prominent at the present time in the various departments of art and literature, and to ascertain the latest developments and their value in poetry and fiction. For the most part, it is noticeable that periodicals indicate possibly more quickly than the statistics of circulation the tastes, objects of inquiry and of daily interest, about which each district cares.

Of the Sunday service, it may in general be said that it is not a distinguished success. But to attain this high point in the uses of the institution, no such result is necessary. The fact to be considered is simply whether the use is equivalent in value to the necessary expenditure, and this again is complicated by the question whether the cost of its maintenance is in due proportion to the available resources; but neither of these pecuniary considerations is of sufficient importance at the present time to produce in the minds of the Trustees any question as to the propriety of the continuance of the service. So far as the main and the most extensive reading-room in Boylston street is concerned, observation of the attendance indicates that a very considerable proportion of the frequenters consists of persons who do not or cannot visit the Library on ordinary week-days, such as reporters, mechanics, and those who work early and late in their daily vocation, without the opportunity of any convenient access to the weekly and monthly issues proceeding from the press. In respect to the Branches, this need does not yet

appear to have developed itself to the same extent, and it is yet a question not entirely solved whether any proportional necessity exists for the continuance of the services in their districts.

In concluding this Report, the Trustees can simply say they have endeavored to discharge their duties as prescribed by the Ordinance in extending the uses of the institution as largely as practicable to the inhabitants of Boston. But, in approaching this result, the inevitable conclusion has followed that, in so doing, the Library has become of large importance to numerous classes elsewhere. By the directions of the City Government, its privileges have been extended to numerous individuals, whose use of the same directly tended to the advancement of letters. It is impossible in this day and generation to shut up books, or to say that they shall not be used by any individual to whom they are necessary for special work or general progress in knowledge, simply because they are the trust property of neighboring or remote communities. A book never accomplishes the object of its production unless in the hands of some one who wants it. If any books on our shelves are not habitually needed by our own citizens, it is the part of an enlightened intelligence to endeavor to secure in the future such other safe loaning as shall not cause an increase of expense beyond a point which the City Council may consider as a just contribution on their part to the cultivation of the communities which surround us, and which contribute directly or indirectly to the growth of our metropolis. The Free Library of the City of Manchester, though more limited in its general aims than our Library, distributes its books through several English counties.

But whether this further development may or may not be considered consistent or appropriate, there is no question on the part of the Trustees that the institution has never more fully responded to the demands made upon its resources than

during the year of which the relation is now given. That it may continue to live up to the intellectual, moral and social requirements of the large population which it serves, with the immunity of its property, which is the key and guaranty of its circulation, is a large desire for the future, which it is hoped may be abundantly and trustfully met.

WILLIAM W. GREENOUGH,
CHARLES A. BURDITT,
JOHN T. CLARK,
DANIEL S. CURTIS,
SAMUEL A. GREEN,
GEORGE S. HILLARD,
DAVID P. KIMBALL,
WESTON LEWIS,
GEORGE PUTNAM.

[A.]

REPORT OF THE EXAMINING COMMITTEE,

Consisting of William W. Greenough, Esq., Chairman, with William C. Col-
lar, Esq., Thomas B. Curtis, M. D., the Rev. Charles E. Grinnell, the
Hon. Francis B. Hayes, and the Hon. George Lunt, as citizens at large.

The Committee appointed under an Ordinance in relation to the Public Library passed in September, 1869, to examine the Library, and make a report of its condition to the Trustees, respectfully report : —

The Library has continued to increase rapidly, 51,094 volumes having been added during the last Library year, and the total number of books now reaches 260,550. The number of volumes contained in the Bates Hall has advanced from 149,477 to 166,453 ; the collection in the Lower Hall, on the other hand, shows a slight diminution, the number of books having fallen from 32,605, to 32,596.

The rapid and steady growth of the Library is not the only subject of congratulation which this institution affords to its friends. The total circulation, comprising issues for home and hall use, has increased even more rapidly than the number of volumes. If we examine the figures set forth in the statistical tables, which constitute the appendices to the very valuable and interesting report of the Superintendent of the Library, we find that, during the last three years, the total number of issues for the entire Library has been, successively, in 1872, 380,343 ; in 1873, 467,855 ; and in 1874, 625,442. Now, if for each of these three years, we divide the total number of books contained in the Library, by the

number which represent the daily average of issues, we obtain a fraction which may be taken to represent the working efficiency of the Library, showing in what proportion its available resources are daily called into play. Thus for the year 1872, the fraction so obtained is $\frac{1}{156}$, which signifies that during that year one book out of every 156 books was issued daily. For the year 1873, a similar arithmetical process gives the fraction $\frac{1}{137}$; and for the Library year just expired, the fraction is $\frac{1}{128}$, or, if we subtract the number of volumes comprised in the Barton Library, which are not yet in use, we get the fraction $\frac{1}{122}$, which represents the daily use of the Library. It is thus evident, that while the number of volumes increases from year to year, the total circulation of these volumes increases still more rapidly. This interesting and eminently satisfactory result must, no doubt, be attributed partly to the increased facilities for circulation due to the various improvements introduced in the management of the Library, and to the growing efficiency of the more numerous staff placed under the orders of the Superintendent, and partly to the educational influence exerted by the Library upon the public.

This influence of the Library upon the community opens a very interesting subject of research, and one in regard to which the statistics collected and arranged under the direction of the Superintendent give valuable information, of a most encouraging nature for those who wish to see the literary taste of the public mind raised above its past and present level. It has long been a subject of regret to all who were interested in the Library, that the proportion of merely amusing reading should have been so very large, compared with the use made of the more valuable resources of the Library. Thus, the Lower Hall collection, now comprising 32,596 volumes, of which more than one-third (11,858 volumes) consists of books classified under the heading of "English prose and juvenile fiction," etc., presents a total

yearly circulation reaching 253,097 issues, while the total yearly circulation of the Bates Hall collection, numbering 166,453 volumes, is represented by 72,313 issues. The disproportionate use of these two collections made by the public is very striking, and at first sight very unsatisfactory, when we consider the difference of character of the books which they respectively contain. Each report of preceding Examining Committees has touched upon this subject, and regret has been expressed each year, at the continued and excessive predominance of novel-reading over other forms of literary culture. Your Examining Committee of the year 1874 was also, at first sight, struck by this phenomenon, which mature reflection, assisted by the explanations kindly offered by the Superintendent, showed to be an unavoidable, and not altogether undesirable result of the principles upon which the Library is managed. The main object of our Library is to supply the public at large, of every grade, with such books as it desires, and with the reservation that manifestly bad or vicious books are excluded. This programme is well carried out; books that are asked for, if unobjectionable on the score of immorality, are usually obtained, and if the demand for any particular book exceed the supply, additional copies are got, that no applicant need be denied in the long run what he seeks for at the Library. This policy is pursued in accordance with the conviction entertained by those who have charge of the management of the Library, that in any individual case, novel-reading, or any kind of reading, of however trivial a character, is better than no reading at all, and that books, even of the lightest order, exert upon those who can appreciate no higher kind of literature, a certain educational influence which tends in most cases to better their mental condition. It must not be forgotten that, with regard to a large part of the frequenters of the Library, the alternative is not whether they shall read books of a high or of a low grade, but whether they shall read books of amusing

fiction, or not read at all. Your Committee, on consideration of these facts, has concluded not to deprecate the encouragement of novel-reading; but it, nevertheless, greets with pleasure every sign of improvement in the public taste, and every measure designed to raise the standard of reading. In this connection we find cause for satisfaction in the strikingly beneficial effects produced by the new Class list of books in History, Biography, and Travel, in the Lower Hall, devised by the Superintendent and prepared under his direction. The object of this innovation was to make the lighter literary resources of the Lower Hall a stepping-stone, as it were, to the higher grades of intellectual culture attainable in the Bates Hall. The effect during the last eight months, has been to raise by 75 per cent. the use of books comprised in the departments above specified (*i. e.* History, Biography, and Travel), while the addition to the amount of fiction used has been less than three per cent. We learn, moreover, that this beneficial influence on the frequenters of the Lower Hall has gone on increasing to such an extent that, if we compare the month of June of the last Library year with the month of June just expired, we find in the reading of History, etc., an increase of 200 per cent., while the entire reading of that Hall has only increased $\frac{1}{2}$ per cent. beyond the figures of the year before. Besides this effect produced upon the quality of the reading in the Lower Hall, there is no doubt that a considerable number of readers have been led to make use of the Bates Hall collection, who without the assistance of the "Class list" would have remained habitués of the Lower Hall.

We find other grounds for satisfaction if we compare the increase of circulation apparent at the close of the last Library year in the Bates Hall and in the Lower Hall. When speaking of the total daily use of the entire Library, we found a marked increase from year to year, as shown by the series of fractions $\frac{1}{156}$, $\frac{1}{137}$ and $\frac{1}{122}$. If we apply the same calcula-

tions to the figures belonging respectively to the Bates Hall and to the Lower Hall, we find that while, on the one hand, the daily circulation of the Lower Hall has been for the last four years nearly stationary, the proportion of issues to the number of volumes remaining about the same; on the other hand, the daily average circulation of the Bates Hall has been rapidly increasing from year to year. Thus, the average daily circulation of the Lower Hall, obtained by dividing the total number of books by the average number of daily issues, was, in 1872, $\frac{1}{39}$; in 1873, $\frac{1}{42}$, and in 1874, $\frac{1}{39}$. In the Bates Hall, the corresponding fractions are for 1872, $\frac{1}{875}$; for 1873, $\frac{1}{778}$; and for 1874 (excluding the Barton Library), $\frac{1}{657}$; in other words, while in 1872 one book in 875 was used daily, in 1874 the proportion of books called into daily use was one in 657.

The rapid yearly increase in the use made of the Bates Hall collection by the public, compared with the nearly stationary clientage of the Lower Hall, is very apparent, and shows that a distinct educational influence is exerted by the Library upon the public. It must be remembered, as your Committee were reminded by the Superintendent, that the Library is not dealing with a permanent body of readers, whose literary education it may be held to be effecting. Each year brings to it, with each succeeding generation, as it were, a fresh levy of raw recruits, who start from the lowest grade of literary culture, and swell the ranks of the readers of fiction who frequent the Lower Hall.

It was feared by some that the various Branch Libraries that have of late years been established would divert a portion of its readers from the Central Library, and so get them away from its influence. This is far from being the case, however, as shown by Mr. Winsor's Report, and the reciprocal effect of the Parent Library, and of its Branches upon each other, has been to increase the number of readers on both sides.

Your Committee desire to call attention to the valuable

labors of the Superintendent in the different departments of the Library. Especially is the institution fortunate in having an officer who appreciates bibliographical research. The careful and critical examination of the rare books which the Library possesses, the means taken for the preservation of all valuable papers and documents, the excellent classification which has been made of them, the publication of interesting facts in the "Bulletin," and the merits of rare books given therein, are of great importance to the public, and it is very much indebted to the Superintendent for this valuable work. At the same time, we would not forget to bestow deserved commendation upon all the officers of the Library for the excellent manner in which the work of the institution is performed, making its management an honor to the City and an example worthy of imitation by similar institutions of the country.

By no means an unimportant part of the work done at the Library under the supervision of the Superintendent, and by his initiation, is the collection and arrangement of the statistical tables, which give most clearly, and at the same time, most minutely, a mass of very valuable information, relating to the working of the Library, considered in every detail of its administration, and from every point of view. From these data, which are now being collected every year at our Public Library, and which no similar institution as yet affords in such variety, a most interesting study is being made of what we will venture to call the *Physiology* of a Public Library. Thanks to Mr. Winsor's careful and minute analysis of the working of the institution committed to his charge, there is every reason to believe that the maximum degree of efficiency is rapidly being attained for the Library.

T. B. CURTIS,
for the Committee.

PUBLIC LIBRARY, July, 1874.

[B.]

REPORT OF THE SUPERINTENDENT.

To the Trustees:—

GENTLEMEN,—I herewith present my Seventh Annual Report, and referring you to the appendixes for the body of the information which you have a right to expect, I shall touch here but a few points that need further elucidation.

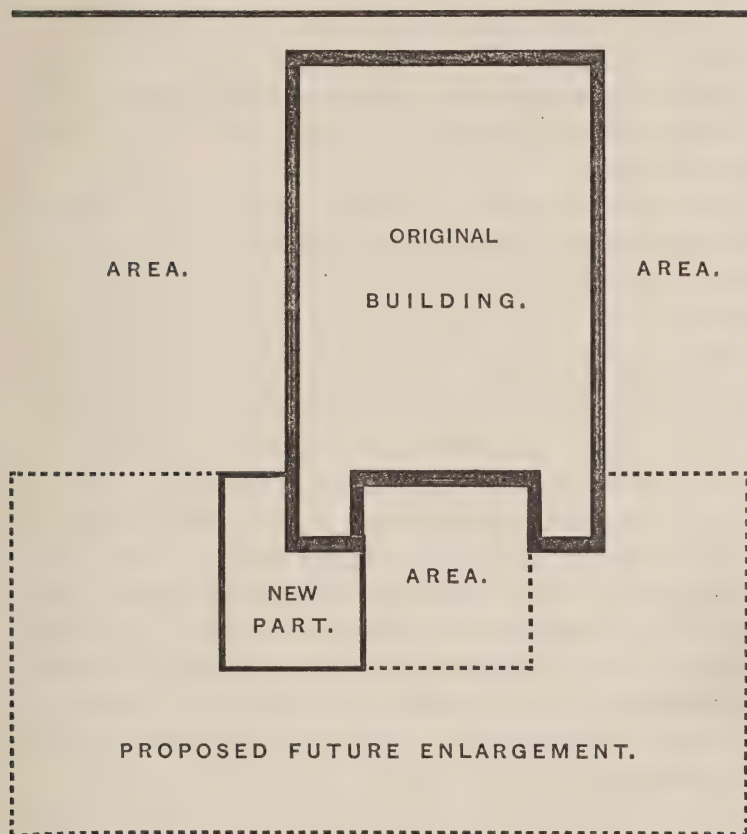
During the year a high-service stand-pipe has been introduced into the south-eastern tower of the Central Library, by the concurrent action of the Cochituate Water Board and the Committee on Public Buildings. A sufficient supply of hose is kept coiled on the various levels, and is always attached for sudden use in case of fire. The fire-proof protections to the large lantern and small skylights of the roof have been provided; but the means of hoisting hose to that elevation, without dragging it through the alcoves, has not yet been supplied,—a delay which I much regret and which might cause serious results, in case of a conflagration in neighboring buildings.* All the iron shutters on the building, except those of the janitor's apartments, are nightly closed, and with the sail-cloth which has been provided to place between the window frames and the shutters, and the means which we have of keeping it wet, it is expected that the amplest security is attained against such violent attacks of external fire as might cause even the shutters to curl. It is in contemplation by the Committee on Public Buildings, to whom is entrusted the erection of the enlargement of the

*This has since been supplied.

south-western tower during the coming year, to maintain an even higher standard of non-combustibility in that new addition, the appropriation for which has been very considerably allowed by the City Council. It will increase the official apartments of the Library, provide for an enlargement of the bindery, afford separate rooms for two or more of our special collections, give the frequenters of our Patent Room the accommodations which they have long felt the want of, and in every way add to the efficiency of the Library.

The new addition has been planned with a view to making it a part of a still further enlargement, which shall have its rear line on Van Rensselaer place, with an open area to supply light and air in the immediate rear of the main building, while this area shall be flanked by an extension of the present towers. The lateral wings, on each side of the main edifice, with their front on a line with the rear of the present structure, would command from their windows a view of the Common, thus : —

Boylston Street.



Van Rensselaer Place.

The heavy lines represent the present building, the light lines the new addition of the coming year, and the dotted line the further combination and enlargement.

Since the date of my last Report the building belonging to the Fellowes Athenæum, and leased to the City for the Roxbury Branch, has been completed, and after an occupancy of nine months, it has been found in every particular adapted to the administration, and is recognized by those conversant with the requirements of a popular Library as more fully meeting those requirements than is the case with any other recent erection.

By the annexation of Charlestown the Public Library of that city became a Branch of this institution, and the rooms which it occupied in the second story of the City Hall in that place not being large enough to meet an increased demand, or even the old demand for space, representation was made in conjunction with the retiring Board of Trustees of the Charlestown Library (under whom, during its independence, that Library had been administered) to the Committee on Public Buildings, that, in consequence of the changes incident to the consolidation of the offices of the two cities, the rooms of the Mystic Water Board could be added with advantage to the original quarters of that library. The action of the Committee was prompt, the consent of the City Council to an appropriation was easily gained, and during the summer the results desired will be secured. Some rearrangement of cases will be required, and perhaps the introduction at once of classifications of the books, such as have not been observed there in the past. The retiring government of the City of Charlestown transferred to that Branch some large paintings which had adorned the Council Chambers in the upper stories of the building, and such of the furniture of the Aldermen's room as would be of use in furnishing the new reading-room.

The annexation of Brighton converted the Holton Library, which had been maintained by that town as a Public Library, into the Brighton Branch of the Public Library of Boston. Under an appropriation by the town, embracing \$18,000 for

land, \$1,500 as the proceeds of the sale of a building which was upon the land, and \$30,000 for erecting a building, the construction of a Library had gone forward under the supervision of a building committee composed jointly from the Trustees of the Holton Library and from the citizens, and at the time of the vote for annexation, it was nearly ready for roofing. A meeting was held at an early day, when this Building Committee met a Committee of the Trustees of this Library, and some slight changes in the interior planning of the new Library were agreed upon, to adapt it more closely to the system upon which our Branches are conducted, and which had proved successful at East Boston, South Boston, and Roxbury. The changes in the permanent interior walls consisted solely of the widening of door-ways, in order to give the closer relations of parts which prompt and economical administration required. Delays, beyond the control of the Trustees, since the city acquired possession of the property, have prevented the prompt approach to completion which was looked for at that time, and the better part of the summer must, I fear, be consumed before the books can be moved, and everything be prepared for opening it to the public. Meanwhile the Library is maintained, as in the past, in rather cramped quarters, which are a part of the old Town Hall.

The action of the City Council in making an appropriation for the establishment of the sixth Branch in Dorchester, during the coming year, has thrown upon the Committee on Public Buildings the necessity of providing a building. Action on their part is expected at an early day.

The tables of the Appendix show an increased activity in every department. It is conclusively proved by the figures given, that the influence of the Central Library upon the Branches is beneficial, and that the large clientage of users which they acquire for themselves does not diminish the usefulness of the Central Library, but, on the other hand, both

in the popular department and in the Bates Hall, its circulation is acquiring an extent unprecedented in their history, and far in advance of the results obtained before the parent Library had extended its influence through any one of its five Branches. The result is not surprising to those who have scanned narrowly the influences which public libraries exert upon communities.

The Roxbury Branch has necessarily advanced in extent beyond the others. This is owing to the beneficent policy of the City, which has provided, by contract with the Fellowes Athenæum, that the income of the Athenæum's funds shall go to increase the books of that Branch, in addition to the proportion allotted to it under the general appropriation. About \$250 a month is the sum at present given to this special increase, and it is gratifying to find that the higher class of books, such as are purchased with this sum, find appreciative readers. It is to be hoped that the success of this coöperation may induce similar private benefactions in connection with the other Branches. That such must in time be the case is quite clear from the information which has reached the Library authorities of the remembrances which have found a place in the last testaments of residents in the neighborhood of other Branches.

The South Boston Branch, although now the smallest of these dependencies, gives gratifying proof of its usefulness in the large circulation which it has maintained; and it is alike a credit to the people of that district and to the system of the Library, that out of 108,000 volumes which have during the year been entrusted to borrowers, every one has been returned to the shelves. Indeed, the immunity from loss in this direction, as shown by one of the Appendixes, is as remarkable as it is gratifying. The percentage of loss in the outlying districts, where borrowers are more easily tracked when they become delinquent, is almost too small to be considered. In the city proper, the difficulties of identification and pur-

suit are much increased, from the intricacies of a social system on so large a scale, and from the facility with which delinquents can conceal their removals from one place to another, and where neighborly acquaintance is not so close as in the lesser segregations of the surrounding districts. Yet, from the Central Library the loss is trifling, and, almost always, it is in such books as can be easily and cheaply replaced.

The Sunday use of the Reading Rooms for Periodicals has now had the experience of a full Library year. At the Central Reading Room the use of the periodicals has been fully equal to expectations, and there can be no question of the gratification and advantage which the privilege has given to many people. So considerable is the number that the care and expense involved are well justified. At the Branches, the advantage has not been so marked, but the constant tendency to increase of use is encouraging for the future. The following figures will be of interest in this connection : —

READING ROOMS.	No. of Magazines.	Sundays Open.	Average issue per Sunday for the year.	Largest average issue per Sun- day in any month.
Central	418	52	421	603, Jan.
East Boston	41	52	141	241, Jan.
South Boston	41	52	132	226, Nov.
Roxbury (10 months)	67	43	74	132, Feb.
Charlestown (4 months)	82	16	82	91, Feb.
Brighton (4 months)	23	17	..	..

At Brighton no record is possible in the present arrangement of the Reading Room. At Charlestown the use of one London and five New York dailies, kept on the tables, is not counted.

By Appendix I, it will be seen that the entire Library now possesses about 260,550 volumes, an extent that permits no other library on the continent to outrank it; while it possesses in the Bates Hall collection (166,453 volumes), a reference as well as circulating Library, surpassed by none other in America in value, or in the due subordination and relative strength of its classifications. The whole, moreover, is indexed and made accessible through a catalogue system, not inferior to any other in ramification and thoroughness.

The work in the Catalogue department has gone on as satisfactorily as heretofore. The ordinary accessions are already swelling the extent of the Cards, both in the Public and in the Official Card Catalogue so greatly that ampler accommodations for each will be required during the coming year.

Beside the work on the ordinary accessions during the year, the cataloguing of the Ticknor Library has been brought near completion, and it is now reckoned that the subsequent revision can be proceeded with during the coming summer, and that the printed volume, for which the City Council have already appropriated the money, will be ready for the public in the course of the new year. Meanwhile, since the receipt of the Barton Library, considerable labor has been expended upon its books in preparing them for the shelves, and upon the large mass of printed and manuscript excerpts, engravings, music, autographs and bibliographical correspondence, which Mr. Barton had accumulated during thirty years of careful collecting. This accumulation, which chiefly concerns the Shakespearian portion of his Library, has been arranged for binding and placed in scrap-books, and, with that portion of his Library which still needs binding, will amount to about 1,200 volumes, as thus finally arranged. These, added to the bound volumes, will swell the aggregate of the Barton Library to over 12,000 volumes, of which about 3,000 volumes belong to the Shakespearian department. It is

hoped during the coming year to get all these bound, and to complete all the preliminary work which belongs to the shelf department, before the room in the new tower, destined to receive the collection, is ready. By that time it is anticipated that Mr. Wheeler and his assistants can begin work on the special Catalogue, which is to be made for this collection.

In August last the long-delayed and consolidated Class-list of books in History, Biography, and Travel in the Lower Hall was ready for the public. The new features in popular cataloguing which it presented soon produced the results which were hoped for. The notes appended to the principal cross-references, and intended to assist readers in the choice of books, had a very marked effect upon the character of the circulation in the Lower Hall. As these notes were also intended to bring more prominently before the class of readers which frequents that department, the resources of the higher classifications of the Bates Hall, a considerable share of the increase of use of that hall must be ascribed to the influence of these notes, though from statistics it is not easy to indicate the proportions. In the Lower Hall, however, the figures of the circulation can be brought to a demonstration. Although but eight months of the year are covered by its effects, the returns of the entire year show an increase over last year of books used in those departments of 75 per cent., while the additional use of fiction is less than three per cent. It has also resulted in reducing the percentage of fiction issued in the popular department (Lower Hall) of the Central Library to less than 72 per cent. of the entire issues of that collection, which is several hundredths below the average maintained in the past, or ordinarily found in free public libraries. Taking the entire reading of the Central Library, the use of fiction is probably not far from 55 per cent. of the whole issues.

I do not share the opinions held by many, who indulge in a wholesale denunciation of the reading of novels. After sev-

eral years' observation, I am fully cognizant of the fact that the censure of fiction is a good deal a matter of class feeling — educationally speaking. Books of one literary grade are held to be valueless by critics on a higher one, who do not appreciate the fact that lower grades of readers should be supplied with mental pabulum suited to their powers of assimilation. The failure to allow for this difference in readers is, I think, at the bottom of many unconsidered assertions regarding the character of certain writers, and the literary necessities of corresponding classes of readers. Nevertheless, there can be nothing more deserving of official recognition, or of the encouragement of those who are fortunate in literary culture, than endeavors to improve the standard of that reading which free libraries supply. The question is only one of method, and it seems to me that persuasion and kindly assistance to the unskilled in books is a more gracious procedure than to deprive them of the only books that allure them to partake of the Library stores. First of all, the mass of ordinary readers must be made to frequent the Library. They are then within its influence, and endeavors to benefit their tastes will, as I think our experiment has shown, accomplish a good result, if the efforts are unremitting. I trust another year will show that the work thus inaugurated will gather strength as it goes on.

It is not just to judge of the literary taste of a community by the reading of its free popular libraries. A large class buy their better reading, and depend upon libraries for the ephemeral novels, which are the talk of the hour. The laborer, or the weary tradesman, notwithstanding his bookcase of the classics of his tongue at home, calls at the Library, after his day's work to get a book to supply a pastime, not to advance a study, for which his exhausted energies leave no chance. Public libraries may not fulfil their highest mission in providing mere recreation, but it is for this only, by the nature of the case, that a considerable proportion of the population can find them of benefit.

I have, during the year, made the matter of the public reading in its hygienic relations, the subject of conference with the late Dr. Derby, the very capable Secretary of the State Board of Health, and have had his assurance of the value of the investigations, which I am in hopes of reducing in the future into an order that may yield some profitable conclusions. That the seasons, and even "spells of weather," and events which touch large masses of the population, affect the *extent* of the Library's circulation, is patent; but that such causes, including epidemics, — whether of a bodily or mental nature, — such as result from disease, financial panics, or engrossing topics of thought, produce results in the *character* of the reading, I am equally convinced, though it will need large observation to array the proofs, and careful scrutiny to allow for other disturbing influences. I am in hopes to be able to present this aspect of our experience in something like a satisfactory fashion, at some future time.

Upon the request of the Commissioner of Education at Washington, there were sent, early in the year, to the Exposition at Vienna, a set of the Catalogues of the Library, its reports and other documents, and a series of blanks, illustrating its methods. Regarding these volumes, Mr. John D. Philbrick, Superintendent of the Public Schools of this city, who went to Vienna as a Special Commissioner, wrote under date of August 22, "You sent here a fine set of documents illustrating the character and workings of the Boston Public Library. I am sorry you did not get a prize, for you well deserved a very high one; but you unfortunately were excluded under the rule, adopted by the General Direction, providing that an exhibitor receiving the highest honor can receive no other for any special exhibit. And as the City of Boston got the Grand Diploma of Honor, and as the jury considered that the Library was an exhibit belonging to the city, it could have no separate recognition. But it was certain that there was not in all the Exposition so complete and

comprehensive a library exhibit as that made by you." The seven volumes, handsomely bound, thus referred to, were subsequently presented to the Imperial Library of Vienna, and duly acknowledged.

I may state that during the year a second edition, with some enlargement, of the Handbook for Readers has been called for; and that the quarterly Bulletins have been continued as in the past.

In conclusion, I may refer to the liberal and graceful act of the late Mayor of the City, the Honorable Henry L. Pierce, who, in testimony of his regard for the Library, has laid his fellow-citizens under increased obligations, by giving to our funds, free of all restrictions, \$5,000. This will be known hereafter as the *Pierce Fund*.

Respectfully submitted,

JUSTIN WINSOR,
Superintendent.

PUBLIC LIBRARY, May 8, 1874.

APPENDIXES
TO THE
SUPERINTENDENT'S REPORT.

1874.

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APPENDIX I.

EXTENT OF THE LIBRARY, BY YEARS.

YEARS.	Total Volumes in the Libraries.	CENTRAL LIBRARY.				ROXBURY BRANCH.			SOUTH BOSTON BRANCH.	CHARTERSTOWN BRANCH.			DORCHESTER BRANCH.	WEST BOSTON BRANCH.	Pamphlets added from the beginning.
		Dates Hall.	Lower Hall.	News- paper Room.	Duplicate Room.	City Part.	Fellows Atheneum.	Total.							
1.. 1852-53	9,688	...	...	...	...	...	...	...	...	...	...	...	...	...	961
2.. 1853-54	10,221	...	...	...	...	...	...	...	...	...	...	...	...	...	3,950
3.. 1854-55	22,617	...	...	...	...	...	...	...	...	...	...	...	...	...	6,507
4.. 1855-56	28,080	...	...	...	...	...	...	...	...	...	...	...	...	...	12,386
5.. 1856-57	31,806	...	...	...	...	...	...	...	...	...	...	...	...	...	16,052
6.. 1857-58	70,851	...	...	...	...	...	...	...	...	...	...	...	...	...	17,928
7.. 1858-59	78,043	60,420	15,819	...	1,804	...	...	...	...	...	...	...	...	...	19,255
8.. 1859-60	85,032	66,228	17,000	...	1,804	...	...	...	...	...	...	...	...	...	20,707
9.. 1860-61	*57,386	75,217	19,161	...	3,008	...	...	...	...	...	...	...	...	...	27,381
10.. 1861-62	105,031	79,359	29,881	...	4,704	...	...	...	...	...	...	...	...	...	28,874
11.. 1862-63	110,563	82,891	22,525	...	5,237	...	...	...	...	...	...	...	...	...	31,043
12.. 1863-64	116,931	88,223	23,592	...	5,116	...	...	...	...	...	...	...	...	...	31,837
13.. 1864-65	123,016	92,172	24,869	...	4,981	...	...	...	...	...	...	...	...	...	32,553
14.. 1865-66	123,673	100,171	25,366	...	5,141	...	...	...	...	...	...	...	...	...	33,566
15.. 1866-67	123,080	103,735	*25,199	...	5,143	...	...	...	...	...	...	...	...	...	44,443
16.. 1867-68	144,062	111,681	28,606	...	5,805	...	...	...	...	...	...	...	...	...	47,254
17.. 1868-69	152,795	117,907	28,723	...	6,106	...	...	...	...	...	...	...	...	...	61,177
18.. 1869-70†	163,573	124,419	29,909	...	6,245	...	...	...	...	...	...	...	...	...	74,770
19.. 1870-71	179,250	125,786	30,574	...	*6,954	...	...	...	...	...	...	...	...	...	89,746
20.. 1871-72	192,958	142,655	31,827	...	*7,314	...	...	...	...	...	...	...	...	...	100,383
21.. 1872-73	200,456	149,477	32,005	...	*8,183	...	...	...	...	...	...	...	...	...	112,153
22.. 1873-74	203,550	166,453	32,506	...	9,400	...	...	...	...	...	...	...	...	...	134,638
						4,793	2,195	6,988	15,788	11,037	54	24			

* Actual count. † Nine months.

NOTE. — The figures under Dorchester and West Roxbury are reservations from duplicates for such prospective branches.

NOTE. — The aggregate of pamphlets "added from the beginning" includes many since bound, singly or in groups (which are now counted among volumes), and a very large number of duplicates, which are thrown out and put among the pamphlets held for exchange.

APPENDIX II.

YEARLY INCREASE OF THE WHOLE LIBRARY BY PURCHASE
AND BY GIFTS.

YEARS.		Increase. (Net after 1861.)		Gifts.		Purchases, in- cluding those charged to funds.		Fellowes Athens- um,**	Donors, exclud- ing anony- mous.
		Vols.	Pamph.	Vols.	Pamph.	Vols.	†Pamph.	Vols.	
1. . . .	1852-53	9,633	961	4,003	961	5,688	. . .	. . .	75
2. . . .	1853-54	6,533	2,989	2,152	2,989	4,381	. . .	. . .	105
3. . . .	1854-55	6,396	2,557	2,663	2,463	3,733	89	. . .	153
4. . . .	1855-56	5,463	5,879	1,865	5,330	3,598	549	. . .	126
5. . . .	1856-57	6,816	3,667	1,686	3,646	5,130	21	. . .	132
6. . . .	1857-58	*35,955	1,885	30,214	1,885	5,741	. . .	. . .	381
7. . . .	1858-59	7,192	1,317	3,405	1,317	3,787	. . .	. . .	247
8. . . .	1859-60	6,989	1,452	3,744	1,452	3,245	. . .	. . .	207
9. . . .	1860-61	†16,943	6,674	12,209	6,656	4,649	18	. . .	242
10. . . .	1861-62	7,391	1,493	1,274	1,493	6,117	. . .	. . .	234
11. . . .	1862-63	5,529	2,169	829	1,953	4,700	212	. . .	194
12. . . .	1863-64	6,226	2,939	1,081	2,772	5,145	167	. . .	219
13. . . .	1864-65	6,082	1,516	804	1,023	5,178	490	. . .	328
14. . . .	1865-66	7,662	4,013	1,476	3,342	6,286	671	. . .	336
15. . . .	1866-67	5,303	7,877	1,465	7,769	7,732	108	. . .	300
16. . . .	1867-68	7,673	2,811	1,554	2,513	6,396	298	. . .	342
17. . . .	1868-69	8,685	13,923	2,138	10,984	6,531	2,939	. . .	649
18. . . .	1869-70	7,775	13,593	1,643	10,228	6,129	3,365	. . .	666
19. . . .	1870-71	§18,090	14,976	9,750	10,805	8,349	4,171	. . .	604
20. . . .	1871-72	||13,708	10,637	4,349	5,831	9,359	4,806	. . .	610
21. . . .	1872-73	14,644	11,770	3,933	8,060	10,705	3,710	865	601
22. . . .	1873-74	51,094	22,475	4,783	17,133	13,671	5,337	1,330	739

* Of these, 24,613 were the Bates gift.

† Of these, 11,721 were the Parker bequest.

‡ Includes pamphlets added both by purchase and exchange, as taken from the Accession Catalogue. The large number, of recent years, has been occasioned by the systematic completion of serials and periodicals for the Central Library, as well as for the Branches.

§ Including 3,774 volumes of the Ticknor bequest, and 2,682 from the Sumner Library Association.

|| Including 1,471 volumes from the Mattapan Literary Association.

** Included in previous columns. These volumes are not the property of the Public Library, but form a part of the Roxbury Branch by agreement.

NOTE. The increase of this year includes the totals of the libraries at Charlestown and Brighton; and also, under purchases, the Barton Library, 12,057 vols.

APPENDIX III.

EXTENT OF THE BATES HALL COLLECTION IN VOLUMES.

	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
The Gen'l Library .	87,658	93,553	101,428	107,724	115,232	121,709	126,207	131,560
Patent Library . . . . .	.....	.....	.....	.....	.....	.....	2,120	||2,323
Bowditch Library*	2,542	2,542	2,542	2,542	2,542	2,542	2,542	2,542
Parker Library* . .	†11,907	11,907	11,907	11,907	11,907	11,907	11,907	11,907
Prince Library . .	1,952	1,952	1,952	1,952	†1,970	1,970	1,970	1,970
Ticknor Library . . . . .	.....	.....	.....	.....	3,774	\$3,907	3,907	3,907
Barton Library . . . . .	.....	.....	.....	.....	.....	.....	——	**12,057
Entered on the Ac- cession Catalogue, but not yet located	1,678	1,327	140	294	361	651	829	187
	105,737	111,281	117,969	124,419	135,786	142,686	149,482	166,453
Condemned	0	0	2	0	0	1	5	0
Total	105,737	111,281	117,967	124,419	135,786	142,685	149,477	166,453

*See Appendix IX.

† Including 186 duplicates, which are boxed and stored in the basement.

‡ Including 18 vols. of MSS.

§ Includes 31 vols. of MSS. as bound. When received they were mostly in stitched brochures, several of which are now bound in one volume. The remainder of the difference between these figures and those for the previous year arose from some discrepancy in the count of pamphlets destined for volumes.

|| Divided into 1,981 volumes for the English; 143 volumes for the American; and 199 volumes for the French specifications and drawings. Included before 1873 in the General Library. Now in charge of a special Curator.

** This is as near as can be ascertained before locating them.

NOTE. — Of the volumes lost from the Bates Hall some reappear each year, while a few in excess disappear, increasing the aggregate loss a little; so that it is probable the figures of the Bates Hall collection are a trifle in excess of what an actual count would indicate.

APPENDIX IV.

EXTENT OF THE LOWER HALL COLLECTION.

	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
Reported the preceding year		25,199	26,606	28,723	29,909	30,574	31,827	32,605
Added during the year		2,003	2,469	1,417	2,780	2,614	1,799	1,465
Total		27,202	29,075	30,140	32,689	33,188	33,626	34,070
Books transferred to Bates Hall		339	93	19	23	7	1	6
Books transferred to Branches					859	535	342	166
Condemned during the year		257	259	212	1,233 [†]	819	678	1,308
Total left . . .	*25,199	26,606	28,723.	29,909	30,574	31,827	32,605	32,596

* Actual count.

NOTE. — There have been since the last actual count in 1867, over a hundred volumes irrecoverably lost in the Lower Hall. Perhaps an equal number are to be classed as “unaccounted for,” but may reappear.

APPENDIX V.

SALE DUPLICATES AND ODD VOLUMES.

(Not including the Parker duplicates, or a large lot of odd and imperfect volumes of books, not likely to have the missing volumes supplied, which are boxed up at intervals.)

	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
Number at beginning of year	4,955	5,146	5,805	6,106	.....	6,954	7,314	8,183
Added during the year	714	1,004	847	443	383	996	1,375	1,641
	5,669	6,150	6,652	6,549	.....	7,950	8,689	9,824
Disposed of	523	345	546	304	234	636	506	†334
Total	5,146	5,805	6,106	6,245	*6,954	*7,314	*8,183	9,490

* This number is by an actual count of the serviceable volumes now arranged in our duplicate Room; and it includes three hundred and eighty-one volumes of British Sessional documents, ready for exchange.

† Being 282 volumes parted with on exchange account; and 52 withdrawn for Branches.

NOTE — There are also of pamphlets some thirty to forty thousand duplicates, arranged and ready for exchanges. Libraries are invited to make such exchanges.

APPENDIX VI.

INCREASE OF THE SEVERAL DEPARTMENTS.

	1868.	1869.	1870.	1871.	1872.	1873.	1874.
<i>Estes Hall.</i>							
Gain in located books (App. VIII.)	6,297	7,475	6,296	7,508	10,384	6,622	6,198
Of these not located at last Report	1,678	1,327	140	294	4,135	651	829
Added and located . .	4,619	6,148	6,156	7,214	6,249	5,971	5,369
Added and not located	1,327	140	294	4,135	651	829	*12,244
Total gain	5,946	6,288	6,450	11,349	6,900	6,800	17,613
Condemned		2			1	5	
Net gain	5,946	6,290	6,450	11,349	6,899	6,795	17,613
<i>Lower Hall.</i>							
Gain in located books .	2,003	2,469	1,417	2,780	2,614	1,799	1,465
Less transfers and condemned books	596	352	231	2,115	1,361	1,021	1,480
Net gain	1,407	2,117	1,186	665	1,253	778	15 (loss) †
<i>Newspaper Room.</i>							
Gain in located books .	.....	.....	.....	.....	.....	254	101
Less loss . . . . .	.....	.....	.....	.....	.....	.....	.....
Net gain . . . . .	.....	.....	.....	.....	.....	254	101
<i>Duplicate Room.</i>							
Gain by addition . . .	.....	.....	.....	.....	.....	1,375	1,641
Less loss by exch'ges, etc.	.....	.....	.....	.....	.....	506	334
Net gain	659	301	139	149	360	869	1,307
<i>E. Boston Branch.</i>							
Gain in located books .	.....	.....	.....	5,936	881	621	664
Condemned and lost . .	.....	.....	.....	.....	50	97	143
Net gain . . . . .	.....	.....	.....	5,936	831	524	521
<i>S. Boston Branch.</i>							
Gain in located books .	.....	.....	.....	.....	.....	885	850
Condemned and lost . .	.....	.....	.....	.....	.....	76	217
Net gain . . . . .	.....	.....	.....	.....	4,365	809	633

* Includes 12,057 (close estimate) of the Barton books, and 187 other volumes.

† The condemnations have been large for the year, the transfers few; but their combined excess over the gains, which are exceptionally small on account of the few books published in this country, shows, for the first time, an absolute loss for the year.

APPENDIX VI, *Continued.*

	1868.	1869.	1870.	1871.	1872.	1873.	1874.
<i>Rox. Branch.</i>							
{ Gain in city part . . . .	.....	.....	.....	.....	.....	3,754	1,069
{ Condemned and lost . . .	.....	.....	.....	.....	.....	4	26
{ Net gain . . . . .	.....	.....	.....	.....	.....	3,750	1,043
{ Fellowes Athenæum . . .	.....	.....	.....	.....	.....	865	1,330
{ Total gain . . . . .	.....	.....	.....	.....	.....	4,615	2,373
<i>Chn. Branch.</i>							
{ Gain in located books . .	.....	.....	.....	.....	.....	.....	15,932
{ Condemned and lost . . .	.....	.....	.....	.....	.....	.....	144
{ Net gain . . . . .	.....	.....	.....	.....	.....	.....	15,788
<i>Bri. Branch.</i>							
{ Gain in located books . .	.....	.....	.....	.....	.....	.....	11,049
{ Condemned and lost . . .	.....	.....	.....	.....	.....	.....	12
{ Net gain . . . . .	.....	.....	.....	.....	.....	.....	11,037
<i>Dor. Branch.</i>							
{ Duplicates reserved for this Branch . . . . .	.....	.....	.....	.....	.....	.....	54
<i>W. Rox. Branch.</i>							
{ Duplicates reserved for this Branch . . . . .	.....	.....	.....	.....	.....	.....	24
<i>Total Increase.</i>							
{ Bates Hall gain	5,946	6,290	6,450	11,349	6,899	6,795	19,271
{ Lower Hall gain	1,407	2,117	1,186	665	1,253	778	(loss) 15
{ Newspaper Room gain . .	.....	.....	.....	.....	.....	254	101
{ Duplicate Room gain . .	659	301	139	149	390	869	1,307
{ E. B. Branch gain . . . .	.....	.....	.....	5,936	831	524	521
{ S. B. Branch gain . . . .	.....	.....	.....	.....	4,365	809	633
{ Rox. Branch gain . . . .	.....	.....	.....	.....	.....	3,750	1,043
{ Fellowes Athenæum gain . . . . .	.....	.....	.....	.....	.....	865	1,330
{ Chn. Branch gain . . . .	.....	.....	.....	.....	.....	.....	15,788
{ Bri. Branch gain . . . .	.....	.....	.....	.....	.....	.....	11,037
{ Dor. Branch gain . . . .	.....	.....	.....	.....	.....	.....	54
{ W. R. Branch gain . . . .	.....	.....	.....	.....	.....	.....	24
{ Total gain	8,012	8,708	7,775	18,099	13,708	14,644	51,094

APPENDIX VII.

INCREASE FROM NEWLY PUBLISHED BOOKS.

	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
English Books with British imprint . .	635	708	625	811	899	1,096	1,389	1,294
English Books with American imprint .	1,154	1,445	1,455	1,411	2,206	3,642	4,301	3,807
English Books with Continental imprint	104	100	80	50	48	115	291	125
Foreign Books. . . .	539	673	789	487	561	891	1,064	858
Duplicates of either class, when not included in the other items	97	.....	447	248	480	.....	.....	.....
Total	2,529	2,926	3,396	3,007	4,194	5,744	7,045	6,084

APPENDIX VIII.

VOLUMES LOCATED IN BATES HALL, BY MONTHS.

MONTHS.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.	1873-74.
May	758	.....	727	455	584	357
June	509	.....	480	464	584	527
July	1,037	.....	462	291	631	839
August	383	347	520	518	554	405
September . .	713	833	378	511	457	436
October	866	697	546	295	520	414
November . .	443	763	695	*4,523	489	377
December . . .	639	632	905	651	646	507
January	626	834	427	611	658	665
February . . .	563	633	706	724	456	594
March	521	382	1,001	788	551	472
April	417	1,175	661	†598	492	605
Total	7,475	6,296	7,508	10,334	6,622	6,198
Pamphlet vols. arranged by the Curator . . . . .	.....	.....	.....	385	554	206

NOTE. — These monthly figures are the results of tables made out year by year, like the one constituting Appendix VI for 1869. The figures for May, June, and July, 1868-69, should follow those for April of the same year. They were misplaced to adapt the table to a change of the Library year.

* 3,876 are books of the Ticknor Library, then assigned to permanent places.

† Includes 31 vols. of the Ticknor MSS.

Pamphlets. During the year the Curator of pamphlets has continued the arrangement of all the loose pamphlets by subjects, etc., in the Cabinet Room; and such as were duplicates and not needed have been arranged in adjacent apartments.

APPENDIX IX. BATES HALL CLASSIFICATIONS. (Not including volumes added, but not yet located.)

SPECIAL LIBRARIES.					Class No.	CLASSES.	GENERAL LIBRARY.									Total of Bates Hall, in- cluding the Spe- cial Libraries.			
1863.	1861.	1866.	1871.	1873.			Library.	Patent Library.	Ticknor Library.	Prince Library.	Located 1867.	Located 1868.	Located 1869.	Located 1870.	Located 1871.		Located 1872.	Located 1873.	Located 1874.	May 1, 1874.
Bowditch	244	276	6	...	...	I. Cyclopædias, etc.	...	...	...	24	86	19	22	22	32	10	9	1,250	1,776
	32	596	3	246	...	II. Bibliography and Literary History .	...	...	...	170	231	326	271	278	235	205	166	4,297	5,174
	16	650	54	...	...	III. General History, Biography, Travel and Geography	...	...	...	170	140	184	157	223	284	199	210	4,467	5,187
	96	693	624	152	143	IV. American History, Geography, Biog- raphy, Travel, and Polite Literature	...	...	...	515	1,168	1,438	918	1,305	911	983	962	16,894	18,602
	75	573	69	16	1,981	V. English History, Geography, Biog- raphy, Travel, and Polite Literature .	...	...	...	493	762	739	767	1,018	635	605	712	14,495	17,200
	59	413	7	40	199	VI. French History, Geography, Biog- raphy, Travel, and Polite Literature .	...	...	...	188	335	413	207	263	443	530	433	8,408	9,126
	9	291	2	30	...	VII. Italian History, Geography, Biog- raphy, Travel, and Polite Literature .	...	...	...	87	229	189	160	238	249	60	198	6,002	6,334
	7	1,283	8	18	...	VIII. Germanic History, Geography, Biog- raphy, Travel, and Polite Literature	...	...	...	228	159	266	222	250	250	260	210	5,103	6,419
	6	1,122	106	27	...	IX. Greek, Latin, and Philology	...	...	...	190	100	112	97	107	82	123	98	3,791	5,142
	20	82	...	2,765	...	X. Spanish and Portuguese History, and Literature	...	...	...	...	...	...	...	...	27	47	57	662	3,529
	2	369	1	...	...	XI. Other History, Geography, Biog- raphy, Travel, and Literature	...	...	...	214	216	189	160	262	176	222	143	3,544	3,916

908	601	5	97	...	XII. Periodicals and Transactions	314	341	567	445	560	397	394	208	13,310	14,921
144	3,243	872	310	...	XIII. Theology, Ecclesiastical History, etc.	968	565	836	617	985	406	620	672	12,753	17,552
5	1,247	49	77	...	XIV. Metaphysics and Social Science . . .	185	343	429	444	378	263	324	290	5,201	6,669
3	397	13	30	...	XV. Jurisprudence	145	101	111	112	114	106	115	109	2,842	3,185
65	98	...	15	...	XVI. Political Economy	79	66	118	75	130	58	101	97	1,316	1,494
3	66	22	...	...	XVII. Medical Science	370	556	706	515	365	669	747	499	8,462	8,553
14	124	...	...	...	XVIII. Natural History and Science	155	170	172	212	191	331	289	188	1,478	5,616
824	90	20	53	...	XIX. Mathematics and Physical Sciences .	312	318	394	440	485	434	323	301	7,260	8,247
4	9	...	...	...	XX. Useful Arts	96	116	119	102	76	181	256	565	1,992	2,005
...	29	1	...	...	XXI. Fine Arts	197	205	193	339	253	215	201	162	4,194	4,154
6	...	...	...	...	XXII. Bound Vols. of Miscellaneous Pamphl's	...	...	15	6	5	3	9	5	420	433
...	...	18	31	...	XXIII. Bound Vols. of Manuscripts	...	...	...	...	...	...	49	1	50	50
2,542	11,721	1,970	3,907	2,322	Totals	5,100	6,297	7,475	6,296	7,508	6,477	6,622	5,995	132,251	155,106

EXPLANATION. — Class III includes General History, Universal Biographies, Histories of Eras, Voyages and Travels, when embracing several countries, and collected works of historians.

Class IV includes North and South American History, Documents and Statistics, Biographies of Americans, Geography of, and Voyages and Travels in America, with the collected works of American writers, and what of American Literature is sometimes termed Polygraphy.

Class V, CLASS VI, CLASS VII, CLASS VIII. — These have the same scope for the respective countries that Class IV has for America. Class VIII includes also Belgium, the Netherlands and Switzerland, as also the Scandinavian nations.

Class XI includes Russia, Greece, Turkey, with Asia, Africa, Australia, Polynesia, etc.

Class XIV includes Political Science, Social Science, and Ethics applied and unapplied, Intellectual Science, Education, Rhetoric, Logic, Philology, etc.

Class XIX includes Mechanics, Military and Naval Arts, Agriculture, Domestic Arts, etc.

Class XXII embraces all such pamphlet volumes as may have been received from time to time, and are generally too heterogeneous in their make-up to be classed otherwise than by themselves.

The subdivisions of classes are kept in ranges by themselves, so that for purposes of enumeration or learning percentage of use, it is practicable at any time to get exact figures upon the subdivisions; as also upon such points as Biography, Travel and Voyages, etc., by summing the results of the ranges devoted to them in the several alcoves.

NOTE. — The above figures of the special collections, excepting the Patent Library, which is yearly increased, exhibit them as when received in the Public Library and assigned to our shelves. There have been since then some small additions to them, chiefly from continuations of serials, but such accessions are counted in the classes of the general Library, though the books are located with the special collection. The increase of the Ticker Library will hereafter be considerable from the fund left by the donor; but the accession will appear in this table under the increase of the General Library.

The annual increase of the Patent Library is included in the last column of the Special Libraries, and not in the yearly locations of the General Library. The column "May 1, 1874," does not include the totals of the Patent Library, or of the other special libraries.

APPENDIX X.

LOWER HALL CLASSIFICATIONS.

CLASSES.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874. To be deducted.							
	Total Aug. 1.	Total Aug. 1.	Total Aug. 1.	Total May 1.	Total May 1.	Total May 1.	Total May 1.	New books added.	Duplicates added.	Condemned.	Total added, 1873-74.	Transferred to B. II.	Transferred to Branches.	Condemned.	Total, May 1, 1874.
Theology, Moral and Intellectual Science, etc. . . .	1,488	1,569	1,651	1,703	1,753	1,805	1,802	15	2	2	19	..	25	4	1,792
Jurisprudence and Political Science	270	276	280	283	289	275	285	11	..	2	13	..	2	2	294
Medicine, Mathematics, Physics or Natural Science	1,705	1,778	1,857	1,898	1,908	1,948	2,043	61	18	3	82	2	23	2	2,098
Useful and Fine Arts, Military and Naval Science	599	629	647	654	639	629	656	27	4	..	31	..	14	5	668
American History and Politics	1,023	1,059	1,082	1,089	1,086	1,070	1,077	11	1	1	13	2	17	1	1,070
Foreign History and Politics	1,333	1,374	1,387	1,401	1,363	1,359	1,354	12	..	2	14	..	3	3	1,362
Poetry, Drama, Oratory, Rhetoric	2,268	2,344	2,354	2,576	2,467	2,529	2,544	27	1	2	20	1	21	12	2,540
English Prose Fiction, including Juvenile Fiction, and other juvenile books	7,165	8,062	9,130	9,818	10,469	11,281	11,864	368	342	352	1,062	..	2	1066	11,858
Biography	2,342	2,223	2,300	2,336	2,298	2,231	2,246	12	9	2	23	..	27	8	2,234
Travels	1,897	1,871	1,989	2,041	1,990	1,980	1,965	41	5	2	48	..	12	15	1,986
Libraries, Collections, Periodicals, etc.*	2,621	2,798	3,125	3,305	3,478	3,771	3,827	43	44	7	94	1	16	177	3,728
German Books	1,137	1,206	1,232	1,246	1,247	1,250	1,262	7	..	3	10	..	2	9	1,261
Italian Books	221	221	221	224	226	226	227	1	..	..	1	..	..	..	228
French Books	1,043	1,104	1,191	1,200	1,209	1,213	1,232	16	..	1	17	..	2	3	1,244
Spanish Books	..	..	..	..	1	1	1	..	..	..	..	..	..	..	1
Books of Reference	87	92	97	126	171	214	225	7	..	1	8	..	..	1	232
Totals	25,199	26,606	28,723	29,909	30,574	31,827	32,605	659	426	380	1,465	6	166	1308	32,596

* This class, embracing sets like Bohn's "Libraries," etc., includes many books, of course, which in a minute classification, would have been divided among all the previous heads of this table.

NOTE. — The column of "Condemned books replaced" includes books condemned in previous years as well as in the current year. The column "Total added" shows the number of volumes as put upon the shelves, counting as one those bound two volumes in one, etc.

APPENDIX XI.

FUNDS AND DONATIONS, 1873-1874.

1. Bates, Joshua, <i>London</i> , interest on the fund of	.	\$50,000
2. Bigelow, <i>Hon. John P.</i> , " " "	.	1,000
3. Franklin Club, " " "	.	1,000
4. Lawrence, <i>Hon. Abbott</i> , " " "	.	10,000
5. Phillips, <i>Hon. Jonathan</i> , " " "	.	30,000
6. Pierce, <i>Hon. Henry L.</i> , " " "	.	5,000
7. Ticknor, George, " " "	.	4,000
8. Townsend, Mary P., " " "	.	4,000
		\$105,000

Note. — The following reinvestments of these funds have occurred during the year:—

1. Bates Fund, City bonds, No. 1727, due April 1, 1894.
2. Bigelow Fund, City bonds, No. 1726, due April 1, 1894.
5. Phillips Fund (\$10,000 of it), City bonds, No. 1725, due April 1, 1894.
6. Pierce Fund, City bonds, No. 1567, due January 1, 1894.

DONATIONS MAY 1, 1873, TO APRIL 30, 1874.

Donors (excluding anonymous),	.	.	.	.	739
Volumes,	.	.	.	.	8,783
Pamphlets,	.	.	.	.	17,138

DONORS.	Vols.	Pph.
Abbot, <i>Prof. Ezra, D. D., Cambridge</i> , ...		1
Adams, <i>Hon. Charles F., Quincy</i> , ...	4	1
Addeman, <i>Hon. Joshua M., Providence, R. I.</i> , ...	1	2
Advocates' Library, <i>Edinburgh, Scotland</i> , ...	4	
Alabama, State of, ...		1
Albany, <i>N. Y. Young Men's Association</i> , ...		1
Allen, <i>Licut. George H.</i> , ...		24
Allen, <i>Miss Margaret</i> , ...		2
Allibone, <i>S. A., LL. D., Philadelphia</i> , 1 broadside, ...		
American Academy of Arts and Sciences, ...	1	2
American Antiquarian Society, <i>Worcester</i> , ...	1	1
American Association for the Advancement of Science, ...	2	

DONORS.	Vols.	Pph.
American Asylum for the Deaf and Dumb, <i>Hartford, Ct.</i> , ...		3
American Bible Society, <i>New York</i> , ...		2
American Board of Commissioners for Foreign Missions, ...		4
American Colonization Society, <i>Washington, D. C.</i> , ...		2
American Institute, <i>New York</i> , ...	2	
American Institute of Mining Engineers, <i>Philadelphia</i> , ...	1	
American Iron and Steel Association, <i>Philadelphia</i> , ...		1
American News Company, <i>New York</i> , ...	1	
American Philosophical Society, <i>Philadelphia</i> , ...	1	
American Printing House for the Blind, <i>Louisville, Ky.</i> , ...	1	
American Society for the Prevention of Cruelty to Animals, <i>New York</i> , ...		1
American Society of Civil Engineers, <i>New York</i> , ...		8
American Unitarian Association, ...	90	100
Amiens, <i>France</i> , Bibliothèque Communale, ...	1	
Andover, Town of, ...		1
— Memorial Hall Library, ...	1	
— Theological Seminary, ...		1
Andrews, Jacob R., ...	11	
Andrews, Samuel, ...	9	4
Anonymous, 37 newspapers, 44 numbers of periodicals, 2 broadsides, ...	23	287
Antioch College, <i>Yellow Springs, Ohio</i> , ...		7
Appleton, Mrs., ...	28	4
Appleton, Nathan, ...		1
Appleton, William S., ...	1	
Arkansas, State of, ...		1
Asher & Co., <i>London</i> , ...	1	
Attwood, Gilbert & Co., ...		1
Aumer, Joseph, <i>Munich, Germany</i> , ...		12
Austin, Arthur W., ...	1	
Babcock, Rev. William G., ...		2
Baker, Nathaniel B., <i>Des Moines, Iowa</i> , ...	1	1
Baldwin Place Home for Little Wanderers, ...		1
Balfour, David M., ...	2	
Baltimore, Md., School Commissioners, ...	2	
Bancroft, J. P., M. D., <i>Concord, N. H.</i> , ...		1
Bangor, Me., Library Association, ...	1	
Barrows, Horace G., M. D., ...	45	
Barry, John, ...		1
Barton, Mrs. Cora L., <i>Barrytown, N. Y.</i> , ...	2	
Batchelder, Samuel, <i>Cambridge</i> , ...	2	
Bates, James L., ...		1
Bell, Prof. A. Graham, ...	1	
Bellevue Hospital, <i>New York</i> , ...	1	
Benham, Gen. H. W., ...		1
Bennett, Joseph E., <i>Manchester, N. H.</i> , ...	1	
Bent, Goodnow & Co., 4 newspapers, ...		
Bethesda Society, ...		2
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Northampton, Public Library, . . .	1	
Nottingham, <i>England</i> , Free Public Library and Museum, . . .		1
Nye, Gideon, <i>Jr.</i> , <i>Canton, China</i> , . . .	4	
Nystrom, John W., <i>Philadelphia</i> , . . .	1	
O'Donnell, H. E., . . .	3	
Ohio, Commissioners of the Sinking Fund, . . .		1
—— State Library, . . .	12	24
Ohio Historical and Philosophical Society, <i>Cincinnati</i> , . . .	1	
Osgood, John Felt, . . .	7	
Packard, <i>Prof. Alpheus S.</i> , <i>D. D.</i> , <i>Brunswick, Me.</i> , . . .		1
Page, Charles D., 5 numbers of periodicals, . . .	3	62
Page, Henry A., . . .	2	1
Palestine Exploration Society, <i>New York</i> , . . .		1
Palmer, Julius A., <i>Jr.</i> , . . .	2	
Park, <i>Prof. Edwards A.</i> , <i>D. D.</i> , <i>Andover</i> , . . .	1	
Parker, Augustus, . . .	1	
Parker, <i>Mrs. E. F.</i> , . . .	81	3
Parkman, William, . . .	1	
Patten, R. W., . . .	2	
Patterson, Giles J., <i>Chester, S. C.</i> , . . .		1
Patterson, <i>Gen. Robert</i> , <i>Philadelphia, Pa.</i> , . . .	1	
Peabody Academy of Science, <i>Salem</i> , . . .		1
Peabody Institute, <i>Baltimore, Md.</i> , . . .		1
Peabody Institute, <i>Danvers</i> , . . .		4

DONORS.	Vols.	Pph.
Peabody Institute, <i>Peabody</i> , ...	1	2
Pennsylvania, Board of Public Charities, ...	1	1
Pennsylvania Institution for the Blind, <i>Philadelphia</i> , ...		2
Peoria, <i>Ill.</i> , Board of Trade, ...		1
Perkins, Augustus T., ...	1	
Perry, T. S., ...	2	2
Perry, <i>Rev.</i> William S., <i>D. D. Geneva, N. Y.</i> , 3 broad- sides, ...		5
Peyton, John Lewis, <i>Guernsey, Channel Islands</i> , ...	1	
Phelps, Francis, ...	1	
Philadelphia, Directors of City Trusts, ...		1
Philadelphia Library Company, ...		2
Philadelphia Orthopædic Hospital, ...		6
Philadelphia Social Science Association, ...		15
Philbrick, John D., ...		1
Phillips Exeter Academy, <i>Exeter, N. H.</i> , ...		2
Pickering, <i>Prof.</i> Edward C., ...		1
Pierce, <i>Hon.</i> Henry L., ...	3	
Pittsburg, <i>Pa.</i> , Young Men's Mercantile Library, ...		1
Plummer and Wilder, ...		2
Poore, <i>Hon.</i> Ben. Perley, <i>Washington, D. C.</i> , ...		1
Potter, <i>Rev.</i> Noah, <i>D. D.</i> , <i>Yale College, New Haven</i> , ...		1
Potter, Thomas Bayley, <i>London</i> , ...		6
Potter, William J., <i>New Bedford</i> , ...		4
Prang, L., and Co., 2 lithographs, ...		
Pray, Lewis G., ...	1	
Preble, <i>Capt.</i> George Henry, <i>U. S. N.</i> , ...	1	
Prescott, <i>Hon.</i> B. F., <i>Concord, N. H.</i> , ...	1	
Preston, Edward, <i>London</i> , ...	1	
Probasco, Henry, <i>Cincinnati, Ohio</i> , ...	1	
Providence, <i>R. I.</i> , City of, ...		1
Providence Athenæum, ...		1
Putnam, Allen, ...	2	1
Putnam, <i>Rev.</i> George, <i>D. D.</i> , ...	2	
Putnam, James J., <i>M. D.</i> , ...	60	
Quay, <i>Hon.</i> M. S., <i>Harrisburg, Pa.</i> , ...		1
Quincy, <i>Hon.</i> Josiah, 4 broadsides, ...	3	9
Quincy, Josiah Phillips, <i>Wollaston</i> , ...		1
Quincy, Town of, ...		2
— Public Library, ...		1
Rapid Writer Association, <i>Andover</i> , 6 numbers of a peri- odical, ...		
Read, R. L., <i>Lowell</i> , 265 numbers of periodicals, ...	95	420
Reading, Public Library, ...		2
Reale Istituto Lombardo, <i>Milan</i> , ...	2	
Rebonças, <i>Dr.</i> André, <i>Rio de Janeiro</i> , ...	2	
Redwood Library and Athenæum, <i>Newport, R. I.</i> , ...		1
Reed, J. Harris, ...		9
Reed, Reuben, Estate of, ...	15	
Reed, Seth, 2 newspapers, ...		
Reiche, Charles, and Brother, ...	1	
Reynolds, J., ...	1	
Richardson, Charles A., 270 newspapers, ...	3	
Richardson, <i>Hon.</i> William A., <i>Washington, D. C.</i> , ...	5	
Robbins, <i>Rev.</i> Chandler, <i>D. D.</i> , ...		

DONORS.	Vols.	Pph.
Robinson, James R., <i>Cambridge</i> , ...	1	
Rockford, <i>Ill.</i> , Public Library, ...	1	
Rockwell, Henry E., <i>Washington, D. C.</i> , ...	1	
Rockwell, Horace T., ...	1	
Rolfe, William J., <i>Cambridgeport</i> , ...	8	
Rowell, George P., and Co., <i>New York</i> , ...	1	
Royal Astronomical Society, <i>London</i> , ...	1	
Royal Geographical Society, <i>London</i> , ...	3	
Royal Society of Edinburgh, ...	2	
Royal Society, <i>London</i> , ...	2	
Rudersdorff, E., 6 numbers of periodicals, ...	11	2
Russ, Eddy and Co., <i>Worcester</i> , ...		1
Rutgers College, <i>New Brunswick, N. J.</i> , ...		1
Sabin, J., and Sons, <i>New York</i> , ...	1	
Sabine, John D., <i>Washington, D. C.</i> , ...	1	
Saint John, <i>N. B.</i> , City of, ...	3	
St. Louis, Mercantile Library Association, ...		1
— Public School Library, ...		3
St. Stephen's House, ...		10
Salem, City of, ...		9
— North Church and Society, ...	1	
— Union School, ...		1
Salford, <i>England</i> , Museum and Library, ...		2
Salisbury, <i>Hon</i> Stephen, <i>Worcester</i> , ...	4	
Sands, <i>Rear-Admiral</i> B. F., <i>U. S. Naval Observatory</i> , ...	5	2
San Francisco, <i>Cal.</i> , Mercantile Library Association, ...	1	
— Odd Fellows Library Association, ...		1
Sargent, Epes, ...	2	
Saunders, <i>Dr.</i> W. Sedgwick, <i>Guildhall Library, London</i> , ...	1	
Savage, E. H., <i>Chief of Police</i> , ...	1	1
Scharff, <i>Col.</i> J. Thomas, <i>Baltimore, Md.</i> , newspaper cutting, ...		
Schlegel, Everett and Co., ...		1
Schlesische Blinden-Unterrichts-Anstalt, <i>Breslau</i> , ...		1
Schoenhof and Moeller, ...	1	
Scudder, Samuel H., <i>Cambridge</i> , ...	1	
Searle, F. A., 536 broadsides, ...		
Sears, David, Estate of, ...	128	
Sheffield, <i>England</i> , Committee of Free Public Libraries, ...		5
Sibley, John L., <i>Cambridge</i> , ...	2	1
Siders, Henry, <i>Hingham</i> , ...		1
Silas Bronson Library, <i>Waterbury, Ct.</i> , ...		3
Sinnickson, Robert, <i>Trenton, N. J.</i> , 4 broadsides, ...		1
Slack, Charles W., ...	1	
Slack, Francis, <i>M. D.</i> , <i>Cambridge</i> , ...	1	
Slade, Obadiah, <i>Providence, R. I.</i> , ...		1
Smith, Miss A. Lizzie, ...	1	
Smith, Alfred Russell, ...	1	
Smith, <i>Hon.</i> Jerome V. C., <i>M. D.</i> , <i>New York City</i> , ...	1	
Smith, John C., <i>Galena, Ill.</i> , ...	1	
Smith, Samuel, <i>Worcester</i> , ...	1	
Smithsonian Institution, <i>Washington, D. C.</i> , ...	2	
Snider, D. J., <i>St. Louis, Mo.</i> , ...		1
Snow, Edwin M., <i>M. D.</i> , <i>Providence, R. I.</i> , ...		2
Social Law Library, 1 number of a periodical, ...		

DONORS.	Vols.	Pph.
Society of Arts, <i>London</i> , ...	1	
Somerville, Public Library, ...	2	
Southboro', Town Clerk, ...		7
South Carolina, University of, <i>Columbia</i> , ...		1
Southgate, <i>Rev. William S., Annapolis, Md.</i> , ...	1	
Southwick, <i>Miss</i> , ...	13	
Spalding, <i>Rev. George B., Dover, N. H.</i> , ...		1
Spalding, <i>Rt. Rev. John S., D. D., Erie, Pa.</i> , 21 numbers of a periodical, ...		
Springfield, City Library Association, ...		2
Squire, John P., <i>Arlington</i> , ...	1	
Stansbury, Charles F., <i>Washington, D. C.</i> , ...		12
Staples, S. E., <i>Worcester</i> , ...		2
Stevens Institute of Technology, <i>Hoboken, N. J.</i> , ...		1
Stevenson, J. T., ...		1
Stewart, C. F., <i>Concord, N. H.</i> , ...		1
Stimpson, Charles M., ...	2	
Stoddard, Charles, Estate of, ...		38
Stone, <i>Gen. Charles P., Chief of Staff, Cairo, Egypt</i> , ...	2	
Stone, <i>Rev. Edward C., Hartford, Ct.</i> , ...	3	
Stratton, Henry B., ...	8	
Straznicky, <i>Dr. E. R., Astor Library, New York</i> , ...		1
Sturtevant, E. Lewis, <i>M. D., South Framingham</i> , ...		1
Sumner, <i>Hon. Charles</i> , 1 newspaper, ...	21	12
Sykes, Joseph, ...	1	
Syracuse, N. Y., Board of Education, ...		1
Taft, <i>Rev. S. H., Humboldt, Iowa</i> , ...		1
Taunton, Public Library, ...		1
Tennessee School for the Blind, <i>Nashville</i> , ...		2
Tenney, <i>Rev. E. P., Ashland</i> , ...	59	32
Tenney, <i>Mrs. Harriet A., Lansing, Mich.</i> , ...		1
Thayer, <i>Miss C. C.</i> , ...	5	
Thayer, David, <i>M. D.</i> , ...		3
Thornton, J. Wingate, ...	5	
Thurman, William C., 2 newspapers, ...		8
Thwing, S. C., ...	199	
Tilly, <i>Hon. Samuel L., Lieut. Governor of Nova Scotia</i> , ...	40	6
Times Publishing Company, ...	1	
Titus, Charles H., ...		2
Tobey, <i>Hon. Edward S.</i> , 222 numbers of periodicals, ...	1	526
Toner, J. M., <i>M. D., Washington, D. C.</i> , ...		1
Toohey, J. H., <i>Chelsea</i> , 8 numbers of periodicals, ...		1
Townsend, Mary Ashley, <i>Philadelphia</i> , ...	1	
Trumbull, <i>Hon. J. Hammond, Hartford, Ct.</i> , ...	1	
Tufts College, <i>College Hill</i> , ...		2
Turner, Alfred T., <i>City Auditor</i> , ...	1	3
Turner, John, <i>M. D.</i> , ...	18	1
Tuttle, C. W., ...		1
Tweed, <i>Prof. B. F., Medford</i> , ...		287
Union Theological Seminary, <i>New York</i> , ...		1
United States, Adjutant-General's Office, ...		1
— Bureau of Education, ...	3	9
— Bureau of Indian Affairs, ...	1	
— Bureau of Statistics, ...	3	
— Census Office, ...	2	

DONORS.	Vols.	Pph.
United States, Chief of Ordnance, ...	4	
— Department of the Interior, ...	60	
— Department of the Navy, ...	1	
— Department of the Post-Office, ...	18	3
— Department of State, ...	3	
— Department of the Treasury, ...	2	
— Department of War, 40 numbers of a periodical, ...	1	
— Library of Congress, ...		1
— Naval Observatory, ...	1	
— Office of the Chief of Engineers, ...	4	
— Patent Office, ...	28	19
— Signal Office, ...	5	
— Surgeon General's Office, 2 numbers of a periodical, ...	4	1
United States Military Post Library Association, <i>New York</i> , ...		4
Upham, J. Baxter, <i>M. D.</i> , ...	1	
Upham, R. F., <i>Worcester</i> , ...		2
Upton, <i>Hon.</i> George B., ...	1	
Van Amringe, J. H., <i>New York</i> , ...	2	
Vassar College, <i>Poughkeepsie, N. Y.</i> , ...		9
Vachez, Emmanuel, <i>Paris</i> , ...		2
Vaughan, W., ...		1
Vermont State Library, <i>Montpelier</i> , ...	9	3
Vibbert, <i>Rev.</i> George H., <i>Somerville</i> , 44 broadsides, ...		62
Vinton, Frederic, <i>Princeton, N. J.</i> , ...		1
Virginia, State of, ...		1
Vose, J. T., ...		1
Wallace, <i>Lieut.</i> William, <i>U. S. N.</i> , ...	8	
Waltham, Town of, ...		1
Walther, G. J., ...	25	
Warner, <i>Hon.</i> Oliver, <i>Springfield</i> , ...	8	
Warren, William F., <i>D. D.</i> , 2 broadsides, 113 newspapers, 56 numbers of periodicals, ...	12	94
Washburn, <i>Mrs.</i> Margaret, <i>Frankfort, Me.</i> , ...	4	
Washington, <i>D. C.</i> , Library, ...		1
Waterston, <i>Rev.</i> R. C., ...		1
Watertown, Free Public Library, ...		3
Weller and Metcalf, <i>Chicago, Ill.</i> , ...		5
Wells, William N., <i>M. D.</i> , ...	1	
Wesleyan University, <i>Middletown, Ct.</i> , ...	1	
Western Lunatic Asylum, <i>Staunton, Va.</i> , ...		1
Western Reserve College, <i>Hudson, Ohio</i> , ...		1
Westford, Town of, ...		1
West Roxbury, Town Clerk, ...		5
West Springfield, Town of, ...		1
West Virginia, State of, ...		1
Wheeler, William A., 2 broadsides, 1 map, 1 newspaper, ...	20	29
Wheldon, William W., <i>Concord</i> , 1 number of a periodical, ...	6	2
Whipple, Charles K., ...		66
Whittaker, A. E., <i>San Francisco, Cal.</i> , ...		3
White, Ambrose H., ...	1	
White, J. C., <i>M. D.</i> , 47 numbers of periodicals, ...	1	40
Whitehill, H. R., <i>Carson City, Nevada</i> , ...	1	
Whiting, <i>Mrs.</i> William, 22 maps, ...	232	7
Whitmore, William H., ...	2	

DONORS.	Vols.	Pph.
Whitney, <i>Rev. F. A.</i> , ...		1
Whitney, <i>Prof. H. M. Beloit, Wis.</i> , ...	1	
Whitney, James L., 2 broadsides, 2 numbers of periodicals,	5	27
Whitney, <i>Prof. William D., LL. D., New Haven, Ct.</i> , ...	1	3
Wilder, <i>Hon. Marshall P.</i> , ...		1
Wiles, Alvah T., <i>Zanesville, Ohio</i> , ...		1
Willcox, E. S., <i>Peoria, Ill.</i> , ...		2
Willey, Henry, <i>New Bedford</i> , ...		1
Williams, David, <i>New York</i> , 1 number of a periodical, ...		
Williams, Henry J., <i>Philadelphia</i> , ...	1	
Williams, <i>Hon. J. M. S., Cambridge</i> , ...		1
Williams, <i>Major J. Otis</i> , ...	1	1
Williams, James, <i>Columbus, Ohio</i> , ...	1	
Williams College, <i>Williamstown</i> , ...		1
Wilmington Institute, <i>Wilmington, Del.</i> , ...		1
Wilson, <i>Mr.</i> , ...		6
Wilson, <i>Vice-President Henry, Natick</i> , ...	10	
Wilson, H. H., <i>Philadelphia</i> , ...	1	
Wilson, <i>Col. Henry W.</i> , ...	2	
Wilson, Hinkle and Co., <i>Cincinnati, Ohio</i> , ...	4	
Winchester, Caleb T., <i>Middletown, Ct.</i> , ...		1
Wing, J. M. and Co., <i>Chicago, Ill.</i> , ...	1	
Winsor, Justin, ...	4	5
Winthrop, <i>Hon. Robert C.</i> , 8 broadsides and 52 numbers of periodicals, ...	3	177
Wisconsin Historical Society, <i>Madison</i> , 1 broadside, ...		
Wisconsin Institution for the Education of the Blind, <i>Janesville</i> , ...		1
Woburn, Library Committee, ...		1
Wolle, H. H., <i>Philadelphia</i> , ...	1	
Woods, George, and Co., <i>Cambridge</i> , ...	1	
Woodward, R. B., <i>San Francisco, Cal.</i> , ...		1
Worcester Young Men's Christian Association, ...		1
Worthington and Flanders, ...	2	
Yale College, <i>New Haven, Ct.</i> , ...		3
Young, <i>Rev. Edward J., Cambridge</i> , ...		1

Note.—The above enumeration includes the gifts to the Fellows Athenæum, connected with the Roxbury Branch.

“For Appendix XII., folding sheet, see end of Report.”

APPENDIX XIII.

REGISTRATION.

Class No.	NOTE. The first registration, 1854-8, had 17,066 names; the second, 1859-67, had 52,829 names.		THIRD REGISTRATION.							
			1868.	1869.	1870.	1871.	1872.	1873.	1874.	Totals.
I.	Applications.	<i>Central Library</i> .	12,057	6,490	6,577	7,096	6,688	6,670	8,016	53,594
		<i>E. B. Branch</i>	...	...	...	2,320	993	826	1,244	5,383
		<i>S. B. Branch</i>	...	...	...	...	232	3,094	1,666	4,992
		<i>Rox. Branch</i>	...	...	...	...	...	...	3,475	3,475
		<i>Chn. Branch</i>	...	...	...	...	...	...	693	693
		<i>Bri. Branch</i>	...	...	...	...	...	...	108	108
		<i>Total</i>	12,057	6,490	6,577	9,416	7,913	10,596	15,202	68,245
II.	Applications sent to Police (for verification when needed).	<i>Central Library</i> .	2,810	3,462	1,904	3,040	2,876	3,419	3,642	21,153
		<i>E. B. Branch</i>	...	...	...	1,012	474	266	463	2,215
		<i>S. B. Branch</i>	...	...	...	...	...	645	515	1,160
		<i>Rox. Branch</i>	...	...	...	...	...	...	237	237
		<i>Chn. Branch</i>	...	...	...	...	...	...	11	11
		<i>Bri. Branch</i>	...	...	...	...	...	...	0	0
		<i>Total</i>	2,810	3,462	1,904	4,052	3,350	4,330	4,868	24,776
III.	Cards Re-fused (mostly for non-residency or under age).	<i>Central Library</i> .	233	202	179	241	267	288	287	1,697
		<i>E. B. Branch</i>	...	...	...	80	28	10	12	130
		<i>S. B. Branch</i>	...	...	...	...	...	64	36	100
		<i>Rox. Branch</i>	...	...	...	...	...	...	89	89
		<i>Chn. Branch</i>	...	...	...	...	...	...	3	3
		<i>Bri. Branch</i>	...	...	...	...	...	...	3	3
		<i>Total</i>	233	202	179	321	295	362	430	2,022
IV.	Cards not called for during the year.	<i>Central Library</i> .	852	589	404	393	439	409	291	3,377
		<i>E. B. Branch</i>	...	...	...	117	151	93	90	451
		<i>S. B. Branch</i>	...	...	...	...	...	179	65	244
		<i>Rox. Branch</i>	...	...	...	...	...	...	17	17
		<i>Chn. Branch</i>	...	...	...	...	...	...	0	0
		<i>Bri. Branch</i>	...	...	...	...	...	...	1	1
		<i>Total</i>	852	589	404	510	590	681	894	4,090

APPENDIX XIII.—*Continued.*

REGISTRATION.

Class No.	NOTE. The first registration, 1854-8, had 17,066 names; the second, 1859-67, had 52,829 names.		THIRD REGISTRATION.							
			1868.	1869.	1870.	1871.	1872.	1873.	1874.	Totals.
V.	Applications Cancelled. (Six months on file, and one month longer after notice.)	Central Library	...	...	...	1,215	264	196	245	1,920
		E. B. Branch	...	...	...	...	82	45	46	173
		S. B. Branch	...	...	...	...	...	82	106	188
		Rox. Branch	...	...	...	...	...	...	17	17
		Chn. Branch	...	...	...	...	...	...	0	0
		Bri. Branch	...	...	...	...	...	...	0	0
		Total	...	...	...	1,215	346	323	414	2,298
VI	Cards in use (deducting Classes III and V.)	Central Library	...	...	...	30,150	36,307	42,493	7,484	...
		E. B. Branch	...	...	...	2,240	3,123	3,894	...	...
		S. B. Branch	...	...	...	...	...	3,180	4,704	...
		Rox. Branch	...	...	...	...	...	...	2,673	...
		Chn. Branch	...	...	...	...	...	...	2,346*	7,320
		Bri. Branch	...	...	...	...	...	...	105	1,378
		Total	...	...	...	32,390	39,430	49,567	†	...

* The entire Registration from June 7, 1869, to May 1, 1874, is 7,320, leaving 4,974 for de
removals, and old cards not renewed, in 5 years.

† During the year an attempt has been made to separate the slips of persons believed now
to be using the Library, distinguishing them by the fact of their visiting the libraries during
the year, and the result, which is of course but approximate, shows that nearly 40,000 cards
may be considered *alive*.

‡ Includes 1,273 names registered before annexation.

APPENDIX XIII.—*Concluded.*
MEMORANDA.

MEMORANDA.	1872.	1873.			1874.						
		CENTRAL LIBRARY.	E. B.	S. B.	CENT'L.	E. B.	S. B.	ROX.	CHN.	BRL.	TOTAL.
Largest weekly No. of applicants .	202	204	34	197	263	81	64	138	64	15	630
Month of this last	Oct.	Nov.		May	Jan.	Jan.	Jan.	July	Feb.	Jan.	
Smallest weekly No. of applicants .	56	58	2	17	74	3	9	15	20	2	123
Month of this last	May	June		Dec.	July	June	June	June	April	March	
Weekly average	128	123	16	60	153	24	32	62	41	6	323
Largest daily number	39	46	14	53	64	21	18	39	22	5	169
Date of same	Feb. 23.	Sept. 23.	Feb. 1.	May 11.	Jan. 24.	Jan. 20.	Jan. 24.	July 21.	Feb. 14.	Jan. 17, etc	
Smallest daily number	2	1	0	2	5	0	0	1	0	0	6
Date of same	Sept. 18.	May 30.		May 30.	July 3.		Several.	June 29.	April 23.	Several.	
Dorchester applicants *	295	285			227						707
Cards reported lost	2,493	2,483	402	711	2,764	271	549	93	64	6	3,997
Of these replaced	1,636	1,701	209	512	2,181	406	441	72	38	6	3,144
Cards detained for fines	273	350	332	192	483	82	322	56	10	1	959
Cancellation warnings	327	241	51	112	291	30	129	29	0	0	479
Of these cards called for	63	45			46	102	23	1	0	0	172

* The number of Dorchester applicants reported in 1870 was 565; in 1871, 293, making with the above, to date, 1,433.

APPENDIX XIV.

BOOKS RECOMMENDED. USE OF BRITISH PATENTS AND TOSTI ENGRAVINGS.

YEARS.	BOOKS RECOMMENDED.*						USE OF BRITISH PATENTS.		USE OF TOSTI ENGRAVINGS.					
	Total recom- mended.		Already in Library.		Received since.		Persons.	Hours' use.	Citizens.		Strangers.		Total.	Copyists.
	Eng.	For.	Eng.	For.	Eng.	For.			Males.	Females.	Males.	Females.		
1854	123													
1855	221													
1856	121													
1857	18													
1858	85													
1859	178													
1860	91													
1861	115													
1862	204													
1863	135													
1864	56													
1865	58								182	243				
1866	306								187	248				
1867	546		95		260				197	248				
1868	1,120		183		423				269	367				
1869	1,178		223		535				361	589				
1870 (nine months)	1,231		257		448				346	389				
1871	1,665		418		549				347	301				
1872	*1,576		334		756				642	815				812
1873	1,625		339		753				973	1,801	119	221	142	642
1874	1,990	290	467	48	1,028	127			1,460	2,591	137	251	152	758
														3
														4

NOTE. — The column of "Received since" denotes those received of the "Total recommended," the same year. What may be in subsequent years received of such "Total recommended" does not appear in this table. For instance, of the 1,120 — (183 + 423) = 514 not received in 1868 of the total recommended that year, a large part has since been received.

* The partial disuse of the Bates Hall, on account of the alterations going on, affected this number.

Patents. — The American and French Patents have been placed in an alcove contiguous to the room of the British Patents, and the whole collection put in charge of a Curator. No record is made of the use of either the American or French Patents.

Engravings. — These are shown by the Curator, Mondays and Saturdays; and the statistics refer only to the bound volumes, not to those framed and on the walls.

APPENDIX XV.

BATES HALL READING.

CLASSIFICATIONS.	PERCENTAGE OF USE.											
	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
English History, Topography, Biography, Travel and Polite Literature	17.5	16	13	18	20	17	17	17	17	12	19	16
American (North and South) History, Topography, Biography, Travel and Polite Literature	6	8.5	10	8	12	12	12	12	13	10	12	11
French History, Topography, Biography, Travel and Polite Literature	5	7.5	6	6	7	4	5	5	5	4	6	6
Germanic History, Topography, Biography, Travel and Polite Literature	2.5	2	2.5	2	4	3	3	3	2	2	3	3
Italian History, Topography, Biography, Travel and Polite Literature	4	2.5	2	3	3	2	2	2	2	1	1	2
Other History, Topography, Biography, Travel and Polite Literature	3.5	3.5	2.5	4	4	5	5	3	3	3	4	3
General and Epochal History, Geography, Biography, etc.	4.5	4.25	3	3	3	3	3	2	2	1	2	2
Greek, Latin, and Philology	3	3.5	3	3	3	2	2	2	2	2	3	4
Bibliography	2.5	3	3	3	1	2	1	1	1	1	1	1
Transactions	3	1.5	2.3	5	7	5	4	5	1	1	1	1
Periodicals	7	6	6	11	7	8	9	10	8	10	8	8
Fine Arts	9	12	16.5	8	5	8	8	8	9	11	10	11
Natural History and Science	4	4	4.6	3	3	4	3	4	4	5	3	4
Theology, Ecclesiastical History, Ethics, Education, etc.	11	11	8.5	4	4	8	9	8	11	14	10	11
Medicine	7	5	4.6	8	6	6	8	8	9	9	8	7
Law, Government, and Political Economy	1.5	2	2	2	2	2	2	2	2	3	2	2
Useful Arts, Mathematics, Physics, etc.	5.5	5.5	7.5	7	8	7	6	5	6	8	5	6
Miscellaneous Pamphlets, bound.	2	.75	.75	2	1	2	1	3	3	3	2	2

NOTE. — In computing this percentage, the use of books in the Bowditch, Parker, and Prince Libraries, — which are kept apart from the general classifications of the Library, — is reckoned as nearly as possible and included in the usual divisions, as is indicated in the table. See *Explanations* to Appendix IX.

The want of a Catalogue to the Spanish books of the Ticknor Library has continued to prevent any use of those books which would enter into the statistics.

APPENDIX XVI.

LOWER HALL READING.

Class No.	ALCOVES.	CLASSES.	1868.		1869.		1870. (Nine months.)		1871.		1872.		1873.		1874.	
			Loans returned.	Per cent.	Loans returned.	Per cent.	Loans returned.	Per cent.	Loans returned.	Per cent.	Loans returned.	Per cent.	Loans returned.	Per cent.	Loans returned.	Per cent.
1	I, XI and ranges 8, 9, 10 of X, XX.	Sciences, Arts, Professions.	10,522	7.4	11,436	6.97	7,607	4.9	12,662	5.7	15,966	6	12,757	6+	14,422	7
2	II, XII.	American History and Politics	2,533	1.8	2,682	1.63	2,071	1.4	2,270	1	2,056	-1	1,496	1	2,705	3
3	IX, XIX.	Foreign History and Politics	3,030	2.1	3,221	1.96	2,386	1.5	2,702	1.2	2,715	1+	1,863	1	2,894	3
4	III, XIII.	Poetry, Drama, Rhetoric, Miscellaneous, Essays, etc.	3,692	2.6	2,461	1.5	2,441	1.5	5,954	2.7	8,019	4	7,651	7	8,656	4
5	IV, XIV.	Prose fiction for adults and youths	105,227	74.2	125,273	76.36	120,355	78.4	167,604	77.2	173,438	76	154,835	74	158,453	71
6	VII, XVII.	Biography	3,641	2.6	4,570	2.78	4,025	2.7	5,108	2.2	4,106	2	2,641	1	5,027	3
7	V, XV.	Travels, Voyages, etc.	3,589	2.3	5,263	3.26	5,154	3.4	6,062	2.8	4,998	3	3,631	1	6,290	3
8	VI, XVI.	Collections, Periodicals, etc..	5,941	4.2	4,550	2.77	5,747	3.8	11,530	5.2	14,815	6	17,167	8	15,563	7
9	VIII, XVIII.															
10	X, XX, except ranges 8, 9, 10.	French, German and Italian Books.	3,978	2.8	4,482	2.73	3,637	2.4	4,451	2	2,691	1+	5,341	2	6,388	3
			141,853	. .	164,038	. . .	153,423	. .	216,696	. .	228,864	. .	207,382	. . .	221,418	. .

NOTE.—The columns of "Loans returned" do not include the books taken and returned the same day.

APPENDIX XVII.

EAST BOSTON BRANCH READING.

(Shown from slips of Books returned.)

Class No.	RANGES.	CLASSES.	1871. (3 mos.)		1872.		1873.		1874.	
			Books returned.	Per. centage.	Books returned.	Per. centage.	Books returned.	Per. centage.	Books returned.	Per. centage.
I.	10, 11, 12, 19, 21 . . .	Biography	669	3	1,104	1	729	1	1,216	1+
II.	4, 33	Collections, Libraries, etc. . . .	552	2	1,002	1	632	1	801	1
III.	24, 26, 28, 29, 30, 32, 34	Fiction in Prose	8,593	36	31,937	43	30,373	45	37,350	46
IV.	27	Foreign Books	27	-1	57	..	62	..	43	..
V.	13, 14, 18, 35	History	1,096	5	1,819	2	1,197	2	1,679	2+
VI.	1, 2	Juvenile Books	6,639	28	25,855	35	25,411	37	26,786	33
VII.	15, 20	Miscellaneous	747	3	1,256	2	798	1+	1,317	1+
VIII.	5, 6, 7, 17, 37, 39, 40, 41	Periodicals (<i>bound</i>)	1,119	5	4,009	6	3,914	6	4,786	-6
IX.	16, 22	Poetry and Drama	2,071	9	2,447	4	1,131	-2	2,206	2+
X.	3, 36, 38	Sciences, Arts, Professions . . .	883	3	2,037	3	1,527	2	1,997	2
XI.	8, 9, 23	Travels, Voyages	1,179	5	2,296	3	1,863	3	2,241	-3
XII.	25	Patent Office Reports	..	..	..	..	..	..	1	..
		Totals	23,575	..	73,839	..	67,637	..	80,423	..

NOTE. — The classification in this Branch is somewhat different from that of the Lower Hall of the Central Library, where juvenile books are scattered among the other classes, as the character of the book, whether fiction, history, biography, etc., would require.

APPENDIX XVIII.

SOUTH BOSTON BRANCH READING.

(Shown from slips of Books returned.)

Class No.	RANGES.	CLASSES.	1873.		1874.	
			Books returned.	Per-centage.	Books returned.	Per-centage.
I.	15, 16	American History and Biography	2,604	-3	2,974	-3
II.	5, 6, 7, 8	Foreign History and Biography	1,867	2	2,242	2+
III.	33, 34, 36	Travels, Voyages	3,054	3+	3,302	3+
IV.	18, 28, 29, 32	Professions	349	-1	436	-1
V.	25	Poetry and Drama	1,909	2	2,092	2+
VI.	31, 39	Arts and Sciences	3,373	3+	3,454	3+
VII.	3, 4, 17, 20, 27, 30, 35	Miscellanies, Collect'ns, etc.	3,162	3+	3,480	3+
VIII.	1, 2, 19	Periodicals (<i>bound</i>)	4,140	4+	5,264	5+
IX.	11, 12, 13, 14, 21, 22, 23, 24, 26	Fiction and Juveniles	76,222	78	85,047	78+
X.	10	Patents	26	} -1	8	. .
XI.	40	Foreign Languages	91		65	. .
		Totals	96,797	. .	108,364	

The grouping of the classifications is varied a little from that in the table for East Boston, in order to show the classes of reading in somewhat different relations.

APPENDIX XIX.

ROXBURY BRANCH AND FELLOWS ATHENÆUM READING.

NOTE.—The two sections of this table, refer to two different collections of books.

Rox. Br. Class No.	RANGES.	CLASSES.	1874.	
			Books Returned.	Per- centage.
I.	1, 3, 5, 7 .	Prose Fiction	28,575	-49
II.	2, 4	Travels	2,623	-5
III.	6, 8	History	1,121	-2
IV.	9, 11	Juveniles	19,261	32+
V.	10, 12	Biography	1,351	2+
VI.	13, 14	Periodicals	1,019	-2
VII.	15, 17	Arts, Sciences, Professions	2,657	4+
VIII.	16	Poetry and Drama	1,219	2+
IX.	18, 19	Collected Works and Lit. Miscellaneous	724	-2
X.	20.	Books in Foreign Languages	55	
		Total	58,605	
F. A. Class No.				
I.	50, 54, 59 .	History, Biography, Travels	1,982	35
II.	55, 57	Modern Foreign Languages	729	13
III.	51, 53, 65, 67	Periodicals	160	2
IV.	52, 56	Miscellaneous Literature	661	12
V.	58	Theology, Sociology, Ethics	412	7
VI.	60	Medicine	46	1
VII.	61	Greek and Lat. Languages and Literature	262	5
VIII.	62	Fine Arts, Engineering	684	12
IX.	63, 69	Law, Politics, Government	36	1
X.	64, 66, 68 .	Mathematics, Natu. and Applied Science	719	12
		Total	5,691	

4. Religious	18	17	17	17	36	41	43	39	3	7	10	14	4	77
5. Illustrated and Foreign Papers	12	17	14	14	23	28	39	26	2	5	26	6	2	67
6. Commercial	9	9	11	11	21	22	16	18	1	1	1	..	..	21
7. Fashion	6	6	8	8	10	14	17	8	5	3	3	2	2	23
8. Illustrated Comic Magazines.	3	3	5	5	4	5	7	5	1	2	1	1	..	10
9. Juveniles	3	4	8	8	14	19	21	12	8	4	4	2	1	26
10. Fine Arts	3	4	4	4	13	15	17	15	2	1	4	2	..	24
Total, excluding duplicates.	208	254	294	304	402	426	474	395	42	44	70	76	23	650

STATISTICS OF USE.														
Number of days open	289	300	†299	†230	..	908	..	360	300	380	311	116	117	..
Total readers	55,284	\$76,892	\$91,674	117,202	193,417	171,519	218,538	162,957	19,186	26,073	16,851	8,637	..	233,704
Daily average readers	191	256	306	510	675	557	678	453	53	72	54	74	..	706
Magazines read, total	81,783	88,034	136,122	142,962	269,150	254,159	288,462	218,268	33,845	47,321	23,321	6,769	..	329,524
Magazines read, daily average . .	283	293	455	622	992	825	897	606	94	131	75	58	..	964

* Transactions of learned societies and costly journals, kept in the Bates Hall, are not included in this count, but they are all embraced — if currently received — in the Periodical List. Issued by the Library.

† Eleven months and no vacation.

‡ Nine months.

§ This includes for 1869, 2,120, and for 1868, 2,013 non-resident readers; but now the distinction is not made.

NOTE. — The use of newspapers at the Charlestown Branch is not included, but the number of readers of them is. No statistics of use at Brighton are practicable under the present arrangements.

APPENDIX XXI.

LOSSES, DELINQUENTS, ETC.

Class No.	CLASSES.	1867.	1868.	1869.	1870.	1871.	1872.	1873.					
		Total.	Total.	Total.	Total.	Total.	Total.	B. H.	L. H.	E. B.	S. B.	Rox.	Total.
1	Books finable (<i>mail notices</i>) .	15,652	11,911	13,124	11,920	18,700	21,868	3,612	16,891	3,110	3,578	. . .	27,191
2	Books returned after notice . .	14,203	11,479	12,613	11,419	17,856	20,872	3,447	15,824	3,009	3,466	. . .	25,746
3	Books sent for by messenger .	1,449	432	511	501	844	993	165	1,067	101	112	. . .	1,445
4	Books recovered by messenger .	. . .	403	491	475	805	956	160	1,011	99	107	. . .	1,377
5	Books not recovered	231	35	20	26	39	37	5	56	2	5	. . .	68
6	Books condemned	420	257	261	212	1,234	889	5	679	95	71	5	855
7	Books covered	. . .	35,241	23,826	34,639	54,184	81,805	. . .	47,956	23,808	31,193	3,600	106,557
8	Persons finable not paying messenger	. . .	86	75	87	166	308	53	325	27	60	. . .	465
9	Fines collected by messenger .	. . .	\$85 73	\$122 10	\$108 37	\$184 07	\$214 20	\$46 48	\$218 04	\$24 07	\$16 00	. . .	\$304 59
10	Fines uncollected by messenger .	. . .	\$40 26	\$40 77	\$41 65	\$98 74	\$107 23	\$21 21	\$123 58	\$9 97	\$21 60	. . .	\$181 36
11	Cost of cartickets for messenger .	. . .	\$11 96	\$10 53	\$14 45	\$24 76	\$22 23	. . .	\$25 11	\$0 20	\$0 96	. . .	\$23 27
12	Cost of mail notices (five cents each)	. . .	\$605 55	\$656 20	\$596 00	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
13	Residences changed without notice	. . .	58	92	57	116	. . .	. . .	270	71	4	. . .	345
14	Books sent to binderies	. . .	. . .	. . .	. . .	2,669	3,219	2,643	2,541	549	614	113	6,439

LOSSES, DELINQUENTS, ETC.—Continued.

Class No.	CLASSES.	1874.							TOTALS.
		B. H.	L. H.	E. B.	S. B.	ROX.	CH'N.	BRL.	
1	Books finable (<i>mail notices</i>)	4,138	15,905	3,232	4,845	2,442	958	413	31,953
2	Books returned after notice	3,950	14,682	3,141	4,689	2,342	939	406	30,149
3	Books sent for by messenger	188	1,223	108	156	58	19	7	1,759
4	Books recovered by messenger	180	1,159	105	156	56	19	5	1,680
5	Books not recovered	8	64	3	0	2	0	2	79
6	Books condemned	0	1,757	143	217	26	144	12	2,279
7	Books covered	...	42,843	37,844	35,491	30,233	3,593	2,038	152,102
8	Persons finable not paying messenger	51	463	31	112	39	—	2	701
9	Fines collected by messenger	\$59.24	\$218.12	\$21.74	\$14.66	\$5.88	—	\$2.12	\$321.76
10	Fines uncollected by messenger	\$37.34	\$167.76	\$11.06	\$27.72	\$11.46	—	.78	\$235.12
11	Cost of car tickets for messenger	...	\$25.76	.52	\$1.00	\$2.00	—	.64	\$29.32
12	Residences changed without notice	...	...	62	58	9	—	—	129
13	Books sent to binderies	...	1,872	522	612	324	155	25	6,354

NOTE.—The figures for Charlestown and Brighton cover only four months.

APPENDIX XXII.

FINANCIAL STATEMENT.

GENERAL LIBRARY ACCOUNT.	1870-71.		1871-72.		1872-73.			1873-74.			Years.	Paid into City Treasury from fines and sales of Catalogues.
	City appropriations.	Expended.	City appropriations.	Expended.	City appropriations.	Expended.	Fellows Athenaeum.	City appropriations.	Expended.	Fellows Athenaeum.		
Binding	\$4,400	\$5,231 38	\$5,200	\$5,569 12	\$4,000†	\$2,511 10		\$5,866	\$5,883 63		1859	\$437 80
Books	7,500	{ 12,109 68	9,000	{ 14,538-60	9,000	{ 12,677 89	2,181 10	35,697 28	{ 44,181 56	\$1,652 22	1860	450 00
Periodicals*		{ 1,979 63		{ 3,130 08		{ 1,895 84			{ 2,679 57		1861	246 34
Catalogues (printing)	4,800	3,433 62	5,700	3,731 85	5,500	3,963 16		8,610	7,513 20		1862	350 00
Expense	1,600	1,678 90	2,000	2,487 04	2,000	2,628 59		4,305	3,141 01		1863	528 49
Fuel	1,300	1,033 80	1,650	1,566 20	1,650	1,543 75		2,580	2,720 50		1864	314 60
Furniture (cabinets, shelving, fixtures, etc.)	1,300	1,982 03	1,650	2,012 83	1,500	1,662 90		2,870	1,452 55		1865	385 64
Gas	1,700	2,041 76	2,200	2,303 98	2,500	2,425 45		5,022	3,460 06		1866	293 92
Printing (miscellaneous)	1,700	2,247 28	{ 2,200	{ 2,299 14	4,000	4,217 59		6,457	5,280 72		1867	504 18
Stationery	1,050	1,303 95	{ 1,400	{ 1,537 44							1868	507 72
Salaries	30,000	29,074 00	35,000	34,507 71	39,650	38,252 45		50,000	48,782 76		1869	659 85
Transportation, Postage, etc.	700	947 22	1,000	1,210 85	1,200	1,213 57		2,440	2,440 24		1870	996 63

BRANCHES.	East Boston Br.		South Boston and Rox. Branches.		Rox. Branch completing outfit.		1871 1872 1873 1874
	4,250	3,899 69					
Books and Periodicals			{ S. B. 3,000 { Rox. 3,000	3,037 76 2,274 10	{ Ch'n 746 55 { Bri.	602 40	1,150 00
Fixtures, Catalogues, Print'g, etc	1,700	2,323 41	{ S. B. 4,500 { Rox. 4,500	4,669 30 595 25	{ Ch'n . . . { Bri.	343 42 175 34	1,472 44
Salaries	3,000	1,117 35	{ S. B. 2,500 { Rox. 2,500	2,660 43 268 88	{ Rox. 3,000 { Ch'n . . . { Bri.	4,084 87 791 87 291 88	1,681 79
Totals	\$65,000	\$70,443 70	\$67,000	\$74,924 84	\$1,000	\$86,498 01	\$2,181 10
					\$127,503 83	\$133,775 68	\$1,652 22

*The appropriation for Periodicals is included in that for Books.

†The appropriation for binding before this year had included the salaries of the workmen in the Bindery, but is now charged to the appropriation for salaries. ‡\$25,197 28 of this amount brought from last year, and added to the appropriations for books to enable the Trustees to buy the Barton Library. The total difference of the total amount expended and appropriated is met by the income of the Trust Funds.

NOTE. — The expenditures for books cover the cost of those chargeable to our Trust Funds Account, as well as those charged to the annual appropriations from the City and also includes such as are bought with the balances with our foreign agents at the close of the previous year. Our financial and library years now nominally correspond, but it will happen that bills accruing subsequently to the middle of March (when the last requisition of the year, payable April 1st, is approved) will be audited in the subsequent year's account, beginning nominally May 1st. In this way books added between March 15th and May 1st may be accounted in one year's growth, and paid for in the subsequent year's account. The cost of maintaining Branches after the first year makes part of the general items of the several appropriations.

The money for Books bought on account of the Fellowes Athenæum is spent under the direction of the Book Committee of the Trustees of the Fellowes Fund.

APPENDIX XXIII.

LIBRARY SERVICE.

JUSTIN WINSOR, *Superintendent.*

WILLIAM A. WHEELER, *Assistant Superintendent.*

JAMES L. WHITNEY, *Principal Assistant.*

EDWARD CAPEN, *Auditor.*

Charles A. Wilson, *Despatch Clerk.*

Miss A. A. Nichols, *Accountant.*

John Barry, *Superintendent's Runner.*

CATALOGUE DEPARTMENT.

WILLIAM A. WHEELER, *Chief.*

James L. Whitney, *Principal Assistant*; Max Auerbach, *Assistant and Curator of Patent Room*; J. Otis Williams, *Curator of Pamphlets and Engravings*; William H. Foster, *Proof-Reader.*

Mrs. R. M. Eastman, *Extra Work*; Mrs. S. A. Joslyn, Miss M. E. Joslyn, *Assistants*; Miss Margaret Allen, *Pamphlets*; Miss A. P. Call, *Cataloguer for Branches*; Miss H. E. Green, *Curator of Public Card Catalogue.*

Miss Alice M. Porée, Miss Maude Ross, *Assistants.*

ORDERING AND RECEIVING DEPARTMENT.

Miss HARRIET N. PIKE, *Chief Clerk.*

Miss M. I. Brooks, *Assistant*; Miss Mary A. McGrath (*extra*), *Assistant*; Miss Elizabeth J. Stevenson, *Newspapers and Duplicates*; Ellen Stevenson, *Attendant.*

SHELF DEPARTMENT.

Mrs. L. T. BARTON, *Custodian.*

Appleton P. C. Griffin, *Assistant Custodian*; Annie M. Kennedy, *Assistant.*

BATES HALL DEPARTMENT.

JOSEPH SYKES, *Keeper.*

Miss L. S. Norton, Miss E. T. Hill, *Assistants.*

John Bresnahan, Timothy Donovan, F. H. Thomas, E. M. Thomas, *Runners.*

LOWER HALL DEPARTMENT.

ELERIDGE BRADSHAW, *Keeper.*

Miss Elizabeth S. Haley, *Delivery Clerk*; Miss Lydia F. Knowles, *Receiving Clerk*; Miss Ellen E. Bresnahan, *Keeper's Clerk*; Misses Eliza J. Mack, Sarah A. Mack, *Assistants.*

Ellen F. McCarthy, Ella Sturmy, Mary Connors, Margaret Donovan, Henrietta E. Mack (*extra*), M. A. Mears (*extra*), *Runners.*

W. F. Robinson, *Registration Clerk*.

Miss Elizabeth Ross, *Assistant Registration Clerk*.

Miss Caroline E. Porée, *Reading Room Attendant*.

EVENING SERVICE. J. M. W. Pratt, *Registration Clerk*; —————
Delivery Clerk; Miss Catharine McGrath, *Receiving Clerk*; Miss Amelia
 McGrath, *Assistant*; R. B. Ross, *Reading Room Attendant*; Geo. W. Evans,
Runner.

SUNDAY SERVICE. Fred. Kyle, *Reading Room Attendant*.

JANITORIAL DEPARTMENT.

WILLIAM E. FORD, *Janitor*.

Thomas Collins, *Assistant*.

BINDING DEPARTMENT.

FRANK P. HATHAWAY, *Foreman*.

Andrew M. Blake, Mrs. Martha Wheeler, *Assistants*.

NOTE. — The binderies of Jackson and Dale, Jerome Seidensticker, M. M.
 Chick, J. W. Ripley, and G. H. Flattich are also employed.

EAST BOSTON BRANCH.

Miss SARAH C. GODBOLD, *Librarian*.

Miss Mary R. Pray, Miss A. M. Wing, *Assistants*.

Mary E. Cathcart, *Runner*.

G. H. Hosea, *Janitor*.

Misses N. S. Lennon, G. Chilcott, Alice Ellis, and Laura Morse, *Substitutes
 and extra Assistants*.

Miss Emma M. Nutter, *Sunday Service*.

SOUTH BOSTON BRANCH.

Mrs. ANNA C. D. KEEN, *Librarian*.

Misses L. Anna Baldwin, E. A. Eaton, A. J. Bragdon, *Assistants*.

H. E. McCarthy, *Runner*.

Joseph Baker, *Janitor*.

Misses E. Watson, M. Webster, Eliz. McCarthy, Emma Davis, and Mary
 Watson, *Substitutes and extra Assistants*.

Mrs. L. A. Dunham, *Sunday Service*.

ROXBURY BRANCH.

Miss H. C. PRICE, *Librarian*.

Mrs. Julia A. Nye (*also Sunday Service*), Miss Marietta Goldsmith,
 Miss Clara E. Sanborn, *Assistants*.

Margaret E. Blood, *Runner*.

Charles R. Curtis, *Janitor*.

Misses Ella Blood, Louisa Floden, Rita Bellows, and Mary Floden, *Sub-
 stitutes and extra Assistants*.

CHARLESTOWN BRANCH.

Dr. CORNELIUS S. CARTÉE, *Librarian*.Misses Susan Edwards, S. M. Eberle, *Assistants*Lillian Davis, *Runner*.Thomas E. Smith, *Janitor*.Misses A. M. Stevens, A. E. Eberle, and Howard Doane, *Extra Assistants*.Mr. H. F. Smith, *Sunday Service*.

BRIGHTON BRANCH.

Miss MARY J. BOWKER, *Librarian*.Miss C. A. Wentworth, *Assistant*. B. T. Grailey, *Runner*.Miss K. F. Wellington, *Sunday Service*.

AGENCY DEPARTMENT.

Messrs. Lee and Shepard, *Boston*.Messrs. Little, Brown and Co., and Sampson Low, Marston, Low and Searle,
Boston and London.Mr. F. W. Christern, and M. Charles Reinwald, *New York and Paris*.Dr. Felix Flügel, *Leipsic*.Chev. Eugenio Albèri, *Florence*.

SUMMARY.

	Regulars.	Extras.	
Superintendent	1		Central Library. 48 reg'ars. 10 extras. — 58 in all.
Auditor, Accountant, Despatch Clerk, and Runner	4		
Catalogue Department	12	1	
Ordering and Receiving Department	4	1	
Shelf Department	3		
B. H. Circulating Department	7		
L. H. Circulating Department, Day Service	12	2	
L. H. Circulating Department, Evening and Sunday Service		6	
Janitorial Department	2		
Binding Department	3		
East Boston Branch	5	5	Branches. 25 reg'ars. 20 extras. — 45 in all.
South Boston Branch	6	6	
Roxbury Branch	6	4	
Charlestown Branch	5	4	
Brighton Branch	3	1	
Totals	73	30	
	30		
Grand Total	103		

APPENDIX XXIV.

REPORT ON THE EXAMINATION OF THE LIBRARY,

To the Superintendent:—

SIR,—During the year ending the 30th of April, 1874, an examination has been made of the Central Library, and the East Boston, South Boston and Roxbury Branches, upon which I beg leave to present the following

REPORT.

In the Bates Hall there were missing from the shelves	
at the time of examination	2,621 vols.
Of these there were found,—	
Loaned	939
At the Binder's	852
Otherwise accounted for	800
	—— 2,591 “
Not at present accounted for,—	
Books	27
Magazines imperfect in box . . .	1
Bates Hall Catalogue	1
	—— 29 “

The usual care has been taken, and persistent search has been made for these missing books, but many are without doubt misplaced, and can only be found after another examination of the alcoves.

Of the 30 volumes reported missing last year, 20 have been found during the present examination; showing that in so large a Library there is an increasing chance of books being returned to the wrong alcoves, and so temporarily missed.

Five of the pamphlets which were reported missing at the first examination in 1869, have been found during the year,

as it was then supposed they would be, bound with other pamphlets; also three books which were reported missing in 1870 have been found.

In the Lower Hall there were missing from the shelves

at the time of examination	7,395 vols.
Loaned	6,304
At the Binder's	206
Otherwise accounted for	853
	— 7,363 “

At present not accounted for, —

Fiction	11
Duplicates of Fiction	12
Miscellaneous books	9
	— 32 “

Three of these missing volumes have been added within the past year, and cannot be traced since their location; six have been lent during the year, and the remainder have not been charged to borrowers, and are not recent accessions.

Of the volumes reported missing last year, seven have been found during the present examination, wrongly numbered; also there have appeared in their proper places three other volumes — one missing in 1871, one missing in 1869, and one which was marked on the shelf-list as missing in 1867.

The number of books missing from each alcove is as follows: —

1st alcove	2 vols.	14th alcove	1 vol.
3d “	1 “	15th “	1 “
4th “	4 “	17th “	5 “
7th “	1 “	18th “	1 “
8th “	1 “	Dup's of 4th alcove	2 “
11th “	2 “	“ 7th “	8 “
13th “	1 “	“ 17th “	2 “

At the East Boston Branch there were missing from the shelves at the time of examination . . . 2,031 vols.

Loaned	1,745	
At the Binder's	120	
Otherwise accounted for	164	
	—	2,029 “

At present not accounted for, —

History	1	
Miscellaneous	1	
	—	2 “

At the South Boston Branch there were missing from the shelves at the time of examination . . . 2,309 vols.

Loaned	1,993	
At the Binder's	129	
Otherwise accounted for	185	
	—	2,307 “

At present not accounted for, —

Biography	1	
Juvenile	1	
	—	2 “

At the Roxbury Branch there were missing from the shelves at the time of examination, —

Fellowes Athenæum books 293 vols.

Of these there were found, —

Loaned	289	
At the Binder's	3	
Otherwise accounted for	1	
	—	<u>293 “</u>

City books 2,005 vols.

There were found, —

Loaned	1,911	
At the Binder's	86	
Otherwise accounted for	6	
	—	2,003 “

At present not accounted for, —

Fiction	1	
Juvenile	1	
	—	2 “

I have also to report the following books which have disappeared from the Bates Hall desk during the past Library year : —

Putnam. Best Reading.

Pierce. Dickens Dictionary.

Moore. What to Read. *The second copy which has disappeared.*

Irving. Annals of Our Time.

Webster. Counting House Dictionary. *The second copy which has disappeared.*

Wheeler. Noted Names of Fiction. *The second copy which has disappeared.*

Ewald. Last Century of Universal History.

Encyclopædia Americana, Vol. 4.

From the desk in the Periodical Reading Room there are missing, —

Ewald. Last Century of Universal History. *The second copy which has disappeared.*

Moore. Encyclopædia of Music. *The third copy which has disappeared.*

Phillips. Dictionary of Biographical Reference.

Respectfully submitted,

L. T. BARTON,
Custodian of the Shelves.

PUBLIC LIBRARY, 15th May, 1874.

APPENDIX XXV.

WORK IN THE LIBRARY BINDERY.

CHARACTER OF WORK.	1871-2.	1872-3.	1873-4.
Bates Hall books bound and finished	2,219	2,008	2,635
Books of the Lower Hall and Branches	1,015	744	753
Books repaired	396	430	492
Catalogues wired and covered for public use in Lower Hall and Branches	490	437	287
Maps dissected and mounted	47	28	9
Map-volumes and shelf-lists mounted	212	165	109
Pamphlet cases	546	64	24
Portfolios	5	8	8
Removable covers for catalogues, and paper covered books	266	263	450
Maps mounted, bound and bordered	54	41	8
Hours of miscellaneous work	1,842	2,207	1,437

APPENDIX XII.

CIRCULATION.

(Books issued. No account is kept of the great use of books within the Library rails.)

Year.	No. of days open.	TOTAL CIRCULATION.				BATES HALL.					LOWER HALL.					EAST BOSTON BRANCH.					SOUTH BOSTON BRANCH.					ROXBURY BRANCH.					CHARLESTOWN BRANCH.					BRIGHTON BRANCH.					
		Issues.	Daily average.	Largest No. in one day.	Date of last column.	Home issues.	Hall issues.	Total issues.	Daily average.	Largest daily use.	Home use. White slips. n.	Daily average.	Largest daily use.	Hall use. Green slips.	Total use.	Home use.	Daily average.	Largest daily use.	Hall use.	Total use.	Home use.	Daily average.	Largest daily use.	Hall use.	Total use.	Home use.	Largest daily use.	Daily average.	Hall use.	Total.	Home use.	Largest daily use.	Daily average.	Hall use.	Total.	Home use.	Largest daily use.	Daily average.	Hall use.	Total.	
a 1854	142	35,389	250	535	Sept. 16						35,389	250	535																												
1855	286	81,281	284	606	Feb. 10						81,281	284	606																												
1856	284	82,661	291	647	Feb. 23						82,661	291	647																												
1857	288	89,423	310	730	Jan. 24						89,423	310	730																												
b 1858	197	75,570	383	693	Feb. 27						75,570	383	693																												
1859	254	149,468	588	1,335	Mar. 5						149,468	588	1,335																												
1860	297	151,020	508	1,052	Feb. 4						151,020	508	1,052																												
1861	274	160,877	587	1,303	Feb. 23						160,877	587	1,303																												
1862	288	180,302	626	1,517	Mar. 1	7,400	10,263	17,663	61		162,639	565																													
c 1863	215	138,027	644	1,534	Feb. 7	5,222	7,124	12,346	57		125,681	585																													
1864	280	184,035	664	1,424	Feb. 27	7,468	11,057	18,525	66		165,510	591																													
1865	275	194,627	708	1,464	Nov. 19	10,371	13,090	23,461	85		171,166	622																													
1866	278	193,862	732	1,589	Feb. 10	e 9,763	10,438	20,201	73		173,661	635																													
1867	277	m 208,963	754	1,813	Feb. 23	13,696	11,553	25,249	92		183,714	662																													
1868	279	175,727	630	1,323	Feb. 1	17,020	16,854	33,874	121	332	141,853	508	1,050																												
d 1869	284	218,677	770	1,498	Feb. 20	23,208	19,702	42,905	151	307	175,772	619	1,239																												
f 1870	230	210,963	917	1,768	Feb. 19	25,996	21,601	47,597	207	441	161,631	703	1,385	1,735	163,366																										
1871	307	h 322,445	g 965	g 1,856	Jan. 28	31,080	34,225	65,205	212	457	227,579	741	1,413	3,531	231,110	25,151	i 335	586	979	26,130																					
1872	308	380,343	1,234	2,425	Mar. 16	23,159	27,092	50,251	163	286	248,029	805	1,472	6,217	254,246	74,804	243	609	1,042	75,846																					
1873	308	467,855	1,519	3,073	p	28,261	31,003	59,264	192	383	230,111	772	1,443	7,946	238,057	67,754	o 222	558	458	68,212	101,688	330	684	634	102,322																
1874	308	625,442	2,031	5,124		34,441	37,872	72,313	235	544	245,244	822	1,535	7,853	253,097	80,771	263	712	320	81,091	107,651	350	762	915	108,566	64,092	612	263	3,250	67,342	32,023	734	327	1,368	33,391	9,642	225	88	0	9,642	

a Six months.
b Removal of the Library.
c Ten months.
d Eleven months (Library not closed for examination).
e New restrictions put upon costly books.

f Nine months.
g Central Library only.
h If the issues at East Boston be excluded, this footing would be 296,315; and if hall issues be excluded, there will be record of 293,710 volumes used at home.
i Open seventy-eight days.

m See report for 1863.
n Includes books borrowed and returned the same day, on white slips, as shown in Appendix XIII.
o The E. B. Branch was open only 307 days, owing to repairs on furnace.
p Includes the largest of each department on any day, without regard to its

being the same day, as in previous entries under this head.
The daily average of the Lower Hall is on the entire issue for the present year.
The use of the Roxbury Branch is for 10 months (244 days) only; that of the Charlestown and Brighton Branches for 4 months only.

City Document.—No. 70.

CITY OF BOSTON.



REPORT
OF THE
BOARD OF COMMISSIONERS
ON THE
SINKING FUNDS FOR THE REDEMPTION
OF THE CITY DEBT.

1874.

CITY OF BOSTON.

IN BOARD OF SINKING FUND COMMISSIONERS.

July 27, 1874.

To the Honorable City Council: —

The Board of Commissioners on the Sinking Funds for the redemption of the debt of the City of Boston, have the honor of presenting to the City Council their seventh semi-annual report, for the six months ending June 30, 1874.

The <i>gross</i> funded debt, June 30, 1874, was . . .	\$42,735,785 77
The <i>gross</i> funded debt, Dec. 31, 1873, was . . .	35,486,395 71

Increase of the <i>gross</i> funded debt during the six months ending June 30, 1874 . . .	\$7,249,390 06
--	----------------

The total amount of the redemption funds, June 30, 1874, was	\$14,264,451 30
---	-----------------

The total amount of redemption funds, De- cember 31, 1873, was	13,213,494 17
---	---------------

Increase of the redemption funds during the six months ending June 30, 1874, was . . .	\$1,050,957 13
---	----------------

<i>Net</i> debt, June 30, 1874	\$28,471,334 47
<i>Net</i> debt December 31, 1873	22,272,901 54

Increase of the <i>net</i> debt during the six months ending June 30, 1874	\$6,198,432 93
---	----------------

The amount of debt redeemed at maturity and cancelled with revenue funds, during the six months, \$636,550 00

The following tables show the condition of the several funds : —

CITY DEBT.

[Funded prior to organization of the Board, \$14,166,789 80.]

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$14,026,989 80
Issued under order, June 16, 1870,	\$4,000 00
Charlestown City Debt,	1,327,349 46
Brighton Town Debt,	708,590 60
West Roxbury Town Debt,	520,000 00
	<u>2,559,940 06</u>
	16,586,929 86

Paid from General Debt Sinking Fund :—

City Debt,	\$264,000 00
Roxbury Debt,	36,150 00
Brighton “	147,400 00
W. Roxbury Debt,	10,000 00
Charlestown “	5,000 00
Dorchester “	5,000 00
	<u>467,550 00</u>

Balance, June 30, 1874, \$16,119,379 86

Sinking Fund. — Balance, Dec. 31,

1873,	\$10,438,255 06
Rec'd from Rev'e,	\$163,861 45
“ “ Int.,	316,271 46
“ “ Charles-	
town Sink. Fund,	56,508 14
	<u>536,641 05</u>
	\$10,974,896 11

Paid City Debt, \$217,000 00

Paid City Debt,

\$47,000, at 99 per

cent.,

46,530 00

Car'd forward, \$263,530 00 \$10,974,896 11

DEBT SINKING FUNDS.

5

Brought forward, \$263,530 00 \$10,974,896 11

Paid Roxbury Debt, 36,150 00

“ Brighton “ 147,400 00

“ W. Rox. Debt, 10,000 00

“ Charlestown “ 5,000 00

“ Dorchester “ 5,000 00

467,080 00

Balance, June 30, 1874, \$10,507,816 11

Invested in City

Notes, \$9,938,675 00

Invested in Brighton

Notes, 105,000 00

Invested in Charles-

town Notes, 37,524 81

10,081,199 81

Cash,

426,616 30

\$10,507,816 11

WATER DEBT.

Debt.—Outstanding, Dec. 31, 1873, \$6,917,711 11

Issued since :—

Additional Supply of Water, \$495,000 00

Parker Hill Reservoir, 161,000 00

Water Works, Ward 13 to 16, 115,000 00

Water Works, 175,000 00

946,000 00

Balance, June 30, 1874, \$7,863,711 11

Sinking Fund.— Balance, Dec. 31,

1873, \$1,302,934 07

Rec'd from Interest, \$39,929 55

“ App. and

Rev. Fund, 70,019 55

70,019 55

Balance, June 30, 1874, \$1,372,953 62

Invested in City Notes,	\$1,370 000 00
Cash,	2,953 62
	\$1,372,953 62

CONSOLIDATED STREET IMPROVEMENT LOAN.

Debt funded July 1, 1869, £800,000, — \$3,823,415 89.

<i>Debt.</i> — Balance, April 30, 1874,	\$3,652,518 15
---	----------------

<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$525,279 63
Rec'd from Revenue,	\$89,821 38
“ Interest,	15,289 30
	105,110 68

Balance, June 30, 1874,	\$630,390 31
-------------------------	--------------

Invested in City Notes,	\$480,000 00
Cash,	150,390 31
	\$630,390 31

ENGLISH HIGH AND LATIN SCHOOL-HOUSE LOT.

Debt funded Nov. 15, 1872, \$280,000 00.

<i>Debt.</i> — Balance, June 30, 1874, transferred to Public Buildings Loan,	\$280,000 00
---	--------------

<i>Sinking Fund.</i> — Balance Dec. 31,	
1873,	\$17,262 60
Received from Interest,	\$480 00
Received from App'n and Rev. Fund,	16,800 00
	17,280 00

Balance, transferred to Public Buildings Loan Sinking Fund,	\$34,542 60
---	-------------

COLUMBUS AVENUE EXTENSION.

Debt funded Dec. 1, 1871,	\$160,000 00
Issued since,	355,000 00
	\$515,000 00

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$156,000 00
Issued since,	355,000 00
	\$511,000 00
Debt paid from Revenue Fund,	6,000 00
Balance, June 30, 1874, transferred to Street Improvement Loan,	\$505,000 00

<i>Sinking Fund.</i> — Balance Dec. 31, 1873,	\$10,124 90
Received from Interest, \$270 00	
Received from App'n and Rev. Fund, 15,180 00	
	\$15,450 00
Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,	\$25,574 90

<i>Revenue Fund.</i> — Balance Dec. 31, 1873,	\$501 35
Received from Revenue,	16,318 75
	\$16,820 10
Paid debt,	6,000 00
Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improvement Loan Revenue Fund,	\$10,820 10

APPROPRIATION AND REVENUE FUND, 1871-72.

Balance, Dec. 31, 1873,	\$147,825 29
Received from Interest,	8,364 02
	\$156,189 31
Paid to Sinking Funds to relieve Taxation,	156,189 31

APPROPRIATION AND REVENUE FUND, 1872-73.

Balance, Dec. 31, 1873,	\$249,475 47
Received from Interest,	14,115 44
	\$263,590 91
Paid to Sinking Funds to relieve Taxation,	263,590 91

APPROPRIATION AND REVENUE FUND, 1873-74.

Balance of unexpended appropriations,	\$238,519 59
Excess of income over estimates,	373,483 36
	\$612,002 95
Paid to Sinking Funds to relieve Taxation,	63,069 78
Balance, <i>Cash</i> , June 30, 1874,	\$548,933 17

SUFFOLK STREET DISTRICT.

Debt funded to Dec. 31, 1873,	\$2,100,000 00
Issued since,	275,000 00
	\$2,375,000 00

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$1,718,000 00
Issued since,	275,000 00
	\$1,993,000 00
Debt paid from Revenue Fund,	46,000 00
Balance, June 30, 1874,	\$1,947,000 00

DEBT SINKING FUNDS.

9

<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$120,655 61
Received from Interest, 3,390 00	
Received from Appro.	
and Rev. Fund, 58,470 00	
	61,860 00
Balance, June 30, 1874,	\$182,515 61
Invested in City Notes,	
Cash,	\$124,000 00
	58,515 61
	\$182,515 61

<i>Revenue Fund.</i> — Balance, Dec. 31,	
1873,	\$1,730 85
Received from Revenue,	47,047 58
	\$48,778 43
Paid debt,	46,000 00
	\$2,778 43
Balance, <i>Cash</i> , April 30, 1874,	

KINGSTON STREET WIDENING.

Debt funded Jan. 1, 1871, \$225,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$178,000 00
Debt paid from Revenue Fund,	18,000 00
Balance, June 30, 1874, trans- ferred to Street Improvement Loan,	\$160,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31,		
1873,		\$20,549 31
Received from Interest,	\$570 00	
Received from Appropriation and Revenue Fund,	4,950 00	
		5,520 00
Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,		
		<u>\$26,069 31</u>

<i>Revenue Fund.</i> — Balance, Dec. 31,		
1873,		\$6,461 86
Received from Revenue,	12,298 07	
		\$18,759 93
Paid debt,	18,000 00	
Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improvement Loan Revenue Fund,		<u>\$759 93</u>

SCOLLAY'S BUILDING.

Debt funded June 1, 1871, and Nov., 1872, \$188,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$136,000 00
Debt paid from Revenue Fund,	4,000 00
Balance, June 30, 1874, transferred to Street Improvement Loan,	<u>\$132,000 00</u>

<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$13,228 57
Received from Interest, \$360 00	
Received from App'n	
and Revenue Fund, 3,960 00	
	4,320 00
Balance, June 30, 1874, trans-	
ferred to Street Improvement	
Loan Sinking Fund,	\$17,548 57
<i>Revenue Fund.</i> — Balance, Dec. 31,	
1873,	\$1,193 46
Received from Revenue,	3,766 67
	\$4,960 13
Paid debt,	4,000 00
Balance, <i>Cash</i> , June 30, 1874,	
transferred to Street Improve-	
ment Loan Revenue Fund,	\$960 13

SHAWMUT AVENUE EXTENSION.

Debt funded Jan. 1, 1871, \$225,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1873,		\$198,000 00
Debt paid from Revenue fund,		17,000 00
Balance, June 30, 1874, transferred to Street		
Improvement Loan,		\$181,000 00
<i>Sinking Fund.</i> — Balance, Dec. 31,		
1873,	\$21,387 17	
Received from Interest, \$600 00		
Received from App'n		
and Revenue Fund, 5,430 00		
	6,030 00	
Balance, June 30, 1874, trans-		
ferred to Street Improvement		
Loan Sinking Fund,	\$27,417 17	

<i>Revenue Fund.</i> — Balance, Dec. 31,	
1873,	\$13,970 61
Received from Revenue,	3,558 31
	\$17,528 92
Paid debt,	17,000 00
Balance, <i>Cash</i> , June 30, 1874,	
transferred to Street Improve-	
ment Loan Revenue Fund,	\$528 92

CONGRESS STREET WIDENING.

Debt funded, April 30, 1874, \$47,000 00.

<i>Debt.</i> — Balance, June 30, 1874, transferred to Street Improvement Loan,	\$47,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$1,454 22
Rec'd from Interest, \$30 00	
Rec'd from App'n and	
Revenue Fund, 1,410 00	
	1,440 00
Balance, June 30, 1874, trans-	
ferred to Street Improvement	
Loan Sinking Fund,	\$2,894 22

<i>Revenue Fund.</i> — Balance, <i>Cash</i> ,	
June 30, 1874, transferred to	
Street Improvement Loan Reve-	
nue Fund,	\$406 66

HARRISON AVENUE EXTENSION.

Debt funded, January 1, 1871, \$220,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$203,000 00
Debt paid from Revenue Fund,	3,000 00
Balance, June 30, 1874, transferred to Street Improvement Loan,	\$200,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31, 1873,	\$21,125 95
Rec'd from Interest, \$600 00	
Rec'd from App'n and Rev. Funds, 6,000 00	
	6,600 00

Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,	\$27,725 95

<i>Revenue Fund.</i> — Balance, Dec. 31, 1873,	\$1,295 96
Rec'd from Revenue,	3,941 62
	\$5,237 58
Paid debt,	3,000 00
Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improvement Loan Revenue Fund,	\$2,237 58

GRAMMAR SCHOOL-HOUSE, L STREET.

Debt funded, Nov. 15, 1872, \$90,000 00.

<i>Debt.</i> — Balance, June 30, 1874, transferred to Public Buildings Loan,	\$90,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31,		
1873,		\$5,547 55
Rec'd from Interest,	\$150 00	
“ “ App'n and		
Rev. Fund,	5,400 00	
		5,550 00
Balance, June 30, 1874, transferred to Public Buildings Loan Sink- ing Fund,		
		<u>\$11,097 55</u>

WIDENING AND GRADING DUDLEY, AND OTHER STREETS.

Debt funded to April 30, 1874, \$180,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1874,	\$171,000 00
Debt paid from Revenue Fund,	8,000 00
Balance, June 30, 1874, transferred to Street Improvement Loan,	<u>\$163,000 00</u>

<i>Sinking Fund.</i> — Balance, Dec. 31,		
1873,		\$10,422 04
Received from Interest,	\$300 00	
“ “ App'n and		
Rev. Fund,	4,920 00	
		5,220 00
Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,		
		<u>\$15,642 04</u>

<i>Revenue Fund.</i> — Balance, Dec. 31,		
1873,		\$6,195 21
Received from Revenue,	2,186 98	
		\$8,382 19
Paid debt,		8,000 00
Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improve- ment Loan Revenue Fund,		<u>\$382 19</u>

FEDERAL STREET BRIDGE WIDENING.

Debt funded, Aug. 15, 1872, \$85,000 00.

<i>Debt.</i> —Balance, June 30, 1874, transferred to Street Improvement Loan,	<u>\$85,000 00</u>
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<i>Sinking Fund.</i> —Balance, Dec. 31, 1874,	\$5,405 19
Rec'd from Interest, \$150 00	
“ “ App'n and	
Rev. Fund, 2,550 00	
	<u>2,700 00</u>

Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,	<u>\$8,105 19</u>
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BACK BAY BRIDGES.

Debt funded to April 1, 1874, \$191,000 00.

<i>Debt.</i> —Balance, June 30, 1874, transferred to Street Improvement Loan,	<u>\$191,000 00</u>
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<i>Sinking Fund.</i> —Balance, Dec. 31, 1874,	\$5,884 15
Received from Interest, \$150 00	
Received from App'n and Rev. Fund, 5,730 00	
Received from sale old material, 525 00	
	<u>6,405 00</u>

Balance, June 30, 1874, trans- ferred to Street Improvement Loan Sinking Fund,	<u>\$12,289 15</u>
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ATLANTIC AVENUE.

Debt funded April 1, 1872, \$450,000 00.

<i>Debt.</i> — Balance, June 30, 1874, transferred to Street Improvement Fund,		<u>\$299,000 00</u>
<i>Sinking Fund.</i> — Received from App'n and Rev. Fund,	\$8,970 00	<u> </u>
Balance June 30, 1874, trans- ferred to Street Improvement Loan Sinking Fund,	\$8,970 00	<u> </u>

KNEELAND STREET WIDENING.

Debt funded Aug. 15, 1872, \$150,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1873,		\$150,000 00
Debt paid from Revenue Fund,		<u>7,000 00</u>
Balance, June 30, 1874, trans- ferred to Street Improvement Loan,		<u>\$143,000 00</u>
<i>Sinking Fund.</i> — Balance, Dec. 31, 1873,	\$4,621 65	
Received from Interest, \$120 00		
Received from App'n and Rev. Fund, 4,290 00	<u> </u>	
	4,410 00	<u> </u>
Balance, June 30, 1874, trans- ferred to Street Improvement Loan Sinking Fund,	\$9,031 65	<u> </u>
<i>Revenue Fund.</i> — Balance, Dec. 31, 1873,	\$2,442 44	
Received from Revenue,	4,816 00	<u> </u>
	\$7,258 44	
Paid debt,	<u>7,000 00</u>	
Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improve- ment Loan Revenue Fund,	\$258 44	<u> </u>

DEBT SINKING FUNDS.

17

DEVONSHIRE STREET EXTENSION.

Debt funded to Dec. 31, 1873,	\$495,000 00
Issue since,	82,000 00
	<u>\$577,000 00</u>

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$469,000 00
Issue since,	82,000 00
	<u> </u>
Balance, June 30, 1874, transferred to Street Improvement Loan,	<u>\$551,000 00</u>

<i>Sinking Fund.</i> — Balance, Dec. 31, 1873,	\$15,025 32
Received from Interest, \$420 00	
Received from App'n and Revenue Fund, 14,820 00	
	<u>15,240 00</u>
Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,	<u>\$30,265 32</u>

<i>Revenue Fund.</i> — Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improvement Loan Revenue Fund,	<u>\$92 50</u>
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SOUTH MARKET STREET EXTENSION.

Debt funded Aug. 15, 1872, \$283,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$277,000 00
Debt paid from Revenue Fund,	23,000 00
	<u> </u>
Balance, June 30, 1874, transferred to Street Improvement Loan,	<u>\$254,000 00</u>

<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	8,613 00
Received from Interest, \$240 00	
Received from App'n	
and Revenue Fund, 7,770 00	
	8,010 00
Balance, June 30, 1874, trans- ferred to Street Improvement	
Loan Sinking Fund,	\$16,623 00
<i>Revenue Fund.</i> — Balance, Dec. 31,	
1873,	\$1,889 84
Received from Revenue,	21,265 00
	\$23,154 84
Paid debt,	23,000 00
Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improve- ment Loan Revenue Fund,	\$154 84

APPLETON STREET EXTENSION.

Debt funded Nov. 15, 1872, \$100,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1874,	\$100,000 00
Debt paid from Revenue Fund,	3,000 00
Balance, June 30, 1874, transferred to Street Improvement Loan,	\$97,000 00
<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$3,083 73
Rec'd from Interest, \$90 00	
" " App'n and	
Rev. Fund, 2,910 00	
	3,000 00
Balance, June 30, 1874, trans- ferred to Street Improvement	
Loan Sinking Fund,	\$6,083 73

Revenue Fund. — Received from

Revenue, \$5,161 00

Paid debt, 3,000 00

Balance, *Cash*, June 30,

1874, transferred to

Street Improvement

Loan Revenue Fund, \$2,161 00

WARREN STREET WIDENING.

Debt funded Nov. 15, 1872, \$115,000 00.

Debt. — Balance, June 30, 1874, transferred to

Street Improvement Loan,

\$115,000 00

Sinking Fund. — Balance, Dec. 31, 1873, \$3,542 73

Received from Interest, \$90 00

“ “ App'n and

Rev. Fund, 3,450 00

3,540 00

Balance, June 30, 1874, trans-

ferred to Street Improvement

Loan Sinking Fund,

\$7,082 73

Revenue Fund. — Balance, *Cash*, June

30, 1874, transferred to Street Im-

provement Loan Revenue Fund,

\$89 50

ADDITIONAL LAND PUBLIC LIBRARY.

Debt funded January 16, 1873, \$70,000 00.

Debt. — Balance, Dec. 31, 1873,

\$70,000 00

Debt paid from Revenue Fund,

1,000 00

Balance, June 30, 1874, — transferred to Public

Building Fund,

\$69,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31,		
1873,		\$4,315 65
Rec'd from Interest,	\$120 00	
“ “ App'n and		
Rev. Fund,	4,200 00	
		4,320 00
Balance, June 30, 1874, — trans-		
ferred to Public Buildings Loan		
Sinking Fund,		\$8,635 65
<i>Revenue Fund.</i> — Rec'd from Rev.,		
		\$1,800 00
Paid Debt,		1,000 00
Balance, June 30, 1874, trans-		
ferred to Public Buildings Loan		
Revenue Fund,		\$800 00

GRAMMAR SCHOOL-HOUSE, ATHERTON DISTRICT.

Debt funded January 16, 1873, \$50,000 00.

<i>Debt.</i> — Balance, June 30, 1874, transferred to		
Public Building Loan,		\$50,000 00
<i>Sinking Fund.</i> — Balance, Dec. 31,		
1873,		\$3,000 00
Rec'd from App'n and Rev. Fund,	3,000 00	
Balance, June 30, 1874, trans-		
ferred to Public Building Loan		
Sinking Fund,		\$6,000 00

SMALL-POX HOSPITAL.

Debt funded January, 16, 1873, \$200,000 00.

<i>Debt.</i> — Balance, Dec. 31, 1873,		
		\$200,000 00
Debt paid from Revenue Fund,		33,000 00
Balance, June 30, 1874, transferred to Public		
Building Loan,		\$167,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$6,000 00
Rec'd from App'n and Rev. Fund,	11,700 00
Balance, June 30, 1874, transferred to Public Building Loan Sinking Fund,	\$17,700 00
<i>Revenue Fund.</i> — Rec'd from Rev.,	
	\$33,156 15
Paid debt,	33,000 00
Balance, <i>Cash</i> , June 30, 1874, transferred to Public Building Loan Revenue Fund,	\$156 15

GRAMMAR SCHOOL-HOUSE, DUDLEY DISTRICT.

Debt funded, April 30, 1873, \$90,000 00.

<i>Debt.</i> — Balance, June 30, 1874, transferred to Public Building Loan,	\$90,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$5,547 55
Rec'd from Interest,	\$150 00
Rec'd from App'n and Rev. Fund,	5,400 00
	5,550 00
Balance, June 30, 1874, transferred to Public Building Loan Sinking Fund,	\$11,097 55

MATHER SCHOOL-HOUSE, WARD 16.

Debt funded, April 30, 1873, \$65,000 00.

<i>Debt.</i> — Balance, June 30, 1874, transferred to Public Building Loan,	\$65,000 00

<i>Sinking Fund.</i> — Balance, Dec. 31,		
1873,		\$4,111 65
Rec'd from Interest,	\$120 00	
Rec'd from App'n		
and Rev. Fund,	3,900 00	
		4,020 00
Balance, June 30, 1874, trans- ferred to Public Building Loan Sinking Fund,		<u>\$8,131 65</u>

WASHINGTON STREET EXTENSION.

Debt funded to Dec. 31, 1873,	\$500,000 00
Issued since,	1,000,000 00
	<u>\$1,500,000 00</u>

<i>Debt.</i> — Balance, Dec. 31, 1873,	\$500,000 00
Issued since,	1,000,000 00
Balance, June 30, 1874, trans- ferred to Street Improvement Loan,	<u>\$1,500,000 00</u>

<i>Sinking Fund.</i> — Balance, Dec.		
31, 1873,		\$46,256 05
Rec'd from Interest,	\$1,350 00	
Rec'd from App'n		
and Rev. Fund,	45,000 00	
		46,350 00
Balance, June 30, 1874, trans- ferred to Street Improvement Loan Sinking Fund,		<u>\$92,606 05</u>

<i>Revenue Fund.</i> — Received		
Revenue,		\$630 00
Balance, <i>Cash</i> , June 30, 1874, transferred to Street Improve- ment Loan Revenue Fund,		<u>\$630 00</u>

BURNT DISTRICT STERLING LOAN.

Debt funded May 1, 1873, £1,000,000, \$5,051,176 65.

<i>Debt.</i> — Balance, June 30, 1874,	\$5,051,176 65
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<i>Sinking Fund.</i> — Balance, Dec. 31,	
1873,	\$154,226 27
Rec'd from Interest,	\$4,500 00
Rec'd App'n and Rev.	
Fund,	151,560 00
	156,060 00
Balance, June 30, 1874,	\$310,286 27

Invested in City Notes,	\$250,000 00
Cash,	60,286 27
	\$310,286 27

<i>Revenue Fund.</i> — Balance, Dec. 31,	
1873,	\$2,063 55
Received Revenue,	12,938 00
Balance, <i>Cash</i> , June 30, 1874,	\$15,001 55

MYSTIC WATER WORKS.

Debt outstanding, as returned Jan. 5, 1874, \$1,403,000 00.

<i>Debt.</i> — Balance, June 30, 1874,	\$1,403,000 00
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<i>Sinking Fund.</i> — Received, City of	
Charlestown,	\$97,597 95
Received Interest and Revenue,	89,616 36
Balance, June 30, 1874,	\$187,214 31
Invested,	\$66,965 15
Cash,	120,249 16
	\$187,214 31

FORT HILL WHARF.

Debt funded Jan. 1, 1874, \$110,000 00.

<i>Debt.</i> — Issued,	\$110,000 00
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Balance, June 30, 1874, transferred to Street Improvement Loan,	\$110,000 00
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<i>Sinking Fund.</i> — Rec'd from App'n and Revenue Funds,	\$3,300 00
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Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,	\$3,300 00
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BROADWAY BRIDGE FOUNDATIONS.

Debt funded, January 1, 1874, \$114,000 00.

<i>Debt.</i> — Issued,	\$114,000 00
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Balance, June 30, 1874, transferred to Street Improvement Loan,	\$114,000 00
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<i>Sinking Fund.</i> — Rec'd from App'n and Rev. Fund,	\$3,420 00
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Balance, June 30, 1874, transferred to Street Improvement Loan Sinking Fund,	\$3,420 00
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WIDENING WASHINGTON AND ESSEX STREETS.

Debt funded, January 1, 1874, \$250,000 00.

<i>Debt.</i> — Issued,	\$250,000 00
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Balance, June 30, 1874, transferred to Street Improvement Loan,	\$250,000 00
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Sinking Fund. — Rec'd from App'n
and Rev. Fund, \$7,500 00

Balance, June 30, 1874, trans-
ferred to Street Improvement
Loan Sinking Fund, \$7,500 00

EASTERN AVENUE AND BRIDGE.

Debt funded, January 1, 1874, \$200,000 00.

Debt. — Issued, \$200,000 00

Balance, June 30, 1874, transferred to Street
Improvement Loan, \$200,000 00

Sinking Fund. — Rec'd from App'n
and Rev. Fund, \$6,000 00

Balance, June 30, 1874, trans-
ferred to Street Improvement
Loan Sinking Fund, \$6,000 00

CHELSEA STREET BRIDGE.

Debt funded Jan. 1, 1874, \$23,000 00.

Debt. — Issued, \$23,000 00

Balance, June 30, 1874, transferred to Street
Improvement Loan, \$23,000 00

Sinking Fund. — Rec'd from App'n
and Rev. Fund, \$690 00

Balance, *Cash*, June 30, 1874,
transferred to Street Improve-
ment Loan Sinking Fund, \$690 00

PUBLIC BUILDINGS LOAN.

Debt, funded to June 30, 1874, \$1,413,000 00.

Balance, debt funded June 30, 1874, \$1,379,000 00.

Debt. — Issued : — for account of —

Grammar School-house, Ward 15,	\$105,000 00
Primary School-house, Ward 9,	60,000 00
Grammar School-house, Dudley Dis- trict,	20,000 00
Primary School-house, East Boston,	80,000 00
Police Station-house, South Boston,	45,000 00
Hose House, Longwood,	28,000 00
Engine and Hook and	\$50,000 00
Ladder House, Ward 5, }	15,000 00
	65,000 00
Highland Street Stable,	85,000 00
Station House, District No. 11,	40,000 00
Primary School-house, Newbury street,	40,000 00

Transferred balances from : —

English High and Latin School-house lot,	280,000 00
Grammar School-house, L street,	90,000 00
Additional land, Public Library,	69,000 00
Grammar School-house, Atherton District,	50,000 00
Small-pox Hospital,	167,000 00
Grammar School-house, Dudley District,	90,000 00
Mather School-house, Ward 16,	65,000 00
Balance, June 30, 1874,	\$1,379,000 00

Sinking Fund. — Received from Appropriation
and Revenue Fund,

\$34,080 00

Transferred balances from : —

Mather School-house, Ward 16, Sinking Fund,	8,131 65
Grammar School-house, Dudley District, Sinking Fund,	11,097 55
Additional land, Public Library Sinking Fund,	8,635 65
Carried forward,	\$61,944 85

DEBT SINKING FUNDS.

27

<i>Brought forward,</i>	\$61,944 85
English, High and Latin School-house Lot, Sinking Fund,	34,542 60
Grammar School-house, L Street, Sinking Fund,	11,097 55
Small-pox Hospital, Sinking Fund,	17,700,00
Grammar School-house, Atherton District, Sinking Fund,	6,000 00
Balance, June 30, 1874,	<u>\$131,285 00</u>
Invested in City Notes,	\$124,000 00
<i>Cash,</i>	7,285 00
	<u>\$131,285 00</u>

Revenue Fund.—Received transferred balances from:—

Additional land, Public Library Revenue Fund,	\$800 00
Small-pox Hospital Revenue Fund,	156 15
Balance, <i>Cash</i> , June 30, 1874,	<u>\$956 15</u>

STREET IMPROVEMENT LOANS.

Debt funded to June 30, 1874, \$5,781,000 00.

Debt, balance June 30, 1874, \$5,320,000 00.*Debt.—Transferred balances from:—*

Columbus avenue,	\$505,000 00
Kingston-street Widening,	160,000 00
Scollay's Building,	132,000 00
Shawmut-avenue Extension,	181,000 00
Congress-street Widening,	47,000 00
Harrison-avenue Extension,	200,000 00
Dudley and other streets, widening and grading,	163,000 00
Federal-street Bridge,	85,000 00
Back Bay Bridges,	191,000 00
<i>Carried forward,</i>	<u>\$1,664,000 00</u>

<i>Brought forward,</i>	\$1,664,000 00
Atlantic avenue,	299,000 00
Kneeland-street Widening,	143,000 00
Devonshire-street Extension,	551,000 00
South Market-street Extension,	254,000 00
Appleton-street Extension,	97,000 00
Warren-street Widening,	115,000 00
Washington-street Extension,	1,500,000 00
Fort Hill Wharf,	110,000 00
Broadway Bridge Foundations,	114,000 00
Widening Washington and Essex streets,	250,000 00
Eastern Avenue and Bridge,	200,000 00
Chelsea-street Bridge,	23,000 00
 Balance, June 30, 1874,	 <u>\$5,320,000 00</u>

Sinking Fund. — Received transferred balances from: —

Widening Congress street,	Sinking Fund,	\$2,894 22
Washington-street Extension,	“	92,606 05
Harrison-avenue Extension,	“	27,725 95
Kingston street,	“	26,069 31
Scollay's Building,	“	17,548 57
Back Bay Bridges,	“	12,289 15
Shawmut-avenue Extension,	“	27,417 17
Widening Warren street,	“	7,082 73
Appleton-street Extension,	“	6,083 73
Atlantic avenue,	“	8,970 00
Dudley and other streets,	“	15,642 04
South Market-street Extension,	“	16,623 00
Federal-street Bridge,	“	8,105 19
Kneeland street,	“	9,231 65
Devonshire-street Extension,	“	30,065 32
Widening Washington and Essex st'ts,	“	7,500 00
Fort Hill Wharf,	“	3,300 00
Broadway Bridge Foundations,	“	3,420 00
 <i>Carried forward,</i>		 <u>\$322,574 08</u>

DEBT SINKING FUNDS.

29

<i>Brought forward,</i>		\$322,574 08
Eastern avenue and Bridge,	Sinking Fund,	6,000 00
Chelsea-street Bridge,	“ “	690 00
Columbus avenue,	“ “	25,574 90
Balance, June 30, 1874,		\$354,838 98
Invested in City Notes,		\$345,000 00
Cash,		9,838 98
		\$354,838 98

Revenue Fund. — Received transferred balances from : —

Widening Congress street Revenue Fund,		\$406 66
Washington-street Extension Revenue Fund,		630 00
Harrison-avenue Extension	“ “	2,237 58
Kingston-street Widening	“ “	759 93
Shawmut-avenue Extension	“ “	528 92
Widening Warren street	“ “	89 50
Appleton-street Extension	“ “	2,161 00
Columbus-avenue Extension	“ “	10,820 10
Dudley and other streets	“ “	382 19
South Market-street Extension	“ “	154 84
Kneeland-street Extension	“ “	258 44
Devonshire-street Extension	“ “	92 50
Scollay's Building	“ “	960 13
Balance, <i>Cash</i> , June 30, 1874,		\$19,481 79

RECAPITULATION, REVENUE AND SINKING FUNDS.

General Debt Sinking Fund,	\$10,507,816 11
Water “ “ “	1,372,953 62
<i>Carried forward,</i>	\$11,880,769 73

<i>Brought forward,</i>	\$11,880,769 73
Consolidated Street Improvement Loan Sinking Fund,	630,390 31
Appropriation and Revenue Fund, 1873-74,	548,933 17
Suffolk-street District Sinking Fund,	182,515 61
“ “ Revenue “	2,778 43
Burnt District Sterling Loan Sinking Fund,	310,286 27
“ “ “ “ Revenue “	15,001 55
Mystic Water Works Sinking Fund,	187,214 31
Public Buildings Loan Sinking Fund,	131,285 00
“ “ “ Revenue “	956 15
Street improvement Loan Sinking Fund,	354,838 98
“ “ “ Revenue “	19,481 79
	\$14,264,451 30

THE DEBT.

Total Funded Debt, Dec. 31, 1873,	\$35,486,395 71
Increase since :—	
City Debt,	\$2,981,000 00
Water Debt,	946,000 00
Charlestown Debt,	1,327,349 46
Mystic Water Debt,	1,403,000 00
Brighton Debt,	708,590 60
West Roxbury Debt,	520,000 00
	7,885,940 06
	\$43,372,335 77

Paid from General Debt Sinking Fund :—

City Debt,	\$264,000 00	
Roxbury Debt,	36,150 00	
Brighton Debt,	147,400 00	
West Roxbury Debt,	10,000 00	
<i>Carried forward,</i>	\$457,550 00	\$43,372,335 77

<i>Brought forward,</i>	\$457,550 00	\$43,372,335 77
Charlestown Debt,	5,000 00	
Dorchester Debt,	5,000 00	
	\$467,550 00	
Paid from Revenue Funds,	169,000 00	
		636,550 00
<i>Gross Funded Debt, June 30, 1874,</i>		\$42,735,785 77
<i>Less Redemption Funds,</i>		14,264,451 30
<i>Net Debt, June 30, 1874,</i>		\$28,471,334 47

Respectfully submitted,

SAMUEL C. COBB,	} <i>Commissioners on the Sinking Funds.</i>
F. U. TRACY,	
ALFRED T. TURNER,	
JOHN T. CLARK,	
WILLIAM H. WEST,	
NEWTON TALBOT,	
JOHN O. POOR,	

City Document.— No. 71.

CITY OF BOSTON.



FIRST SEMI-ANNUAL REPORT

OF THE

Inspection of Prisons and Houses of Detention,

IN

SUFFOLK COUNTY

FOR THE YEAR 1874.



CITY OF BOSTON.

IN BOARD OF ALDERMEN, July 27, 1874.

The Special Committee of the Board of Aldermen, who were appointed to inspect the prisons and houses of detention within the County of Suffolk, and make the examinations and reports required by the Statutes of the Commonwealth, beg leave to submit the following report:—

HOUSE OF CORRECTION.

The Committee visited the House of Correction on the 16th of July, 1874.

At the previous visit, on the 18th of December, 1873, there were in the Institution:—

Males	.	.	.	.	.	437
Females	.	.	.	.	.	62
						— 499

The number of prisoners committed from Dec. 19th, 1873, to July 18, 1874, inclusive, has been:—

Males	.	.	.	.	.	476
Females	.	.	.	.	.	67
						— 543

Remaining in the Institution July 18, 1874.

Males	.	.	.	.	.	521
Females	.	.	.	.	.	78
						— 599

The offences for which the inmates have been committed, are as follows :—

Assault and battery	92
Larceny	112
Idle and disorderly	8
Assault on an officer	2
Simple larceny	1
Assault	8
Drunkenness	59
Unlawfully keeping for sale intoxicating liquor	24
Larceny in a building	60
Breaking and entering	28
Larceny from the person	39
Assault with a dangerous weapon	1
Larceny in a vessel	3
Robbery	2
Breaking and disturbing the peace	7
Forgery	4
Assuming to be an officer of the peace	1
Adultery	10
Fornication	2
Attempting to commit larceny from the person	4
Cheating by false pretences with intent to defraud	3
Assault with a knife	6
Maintaining a liquor nuisance	2
Indecent exposure	2
Uttering a forged instrument	2
Obtaining property by false pretences	2
Vagabond	1
Indecent assault	1
Threats	1
Wantonly breaking glass	1
Assault with intent to rob	3
Keeping a house of ill-fame	8
Rescuing a prisoner	2

Embezzlement	3
Malicious injury to a building	1
Attempting to rescue a prisoner	7
Uttering a forged order for property	1
Unlawfully receiving stolen goods	1
Assault with intent to murder	4
Polygamy	1
Common drunkard	1
Unlawfully conveying intoxicating liquors	1
Accessory to larceny	4
Assault and battery with a steel	2
Attempting to break and enter a building in the night time, with intent to steal	1
Uttering a forged order for the payment of money	3
Mischievously taking and using a boat, without the con- sent of the owner thereof	1
Common night-walker	2
Doing business on the Lord's Day	5
Assault with a stone	1
Lewd and lascivious cohabitation	1
Attempt to commit robbery	1
Maliciously cutting up a dress	1
Total	543

The following-named persons have been pardoned by the Governor:—

Michael Kilroy, pardoned	Dec. 24, 1873
William Tracy, “	“ 25, “
Edward Glynn, “	Jan. 15, 1874
John Bannon, “	Feb. 10, “
Levi Goldstein, “	“ 18, “
Ellen Tucker, “	“ 19, “
George Moore, “	“ 28, “
Michael Quinn, “	May 5, “

Frederic W. Mitton, pardoned	.	.	.	May 28, 1874
Henry O'Brien,	"	.	.	June 25, "
Charles F. Rogers,	"	.	.	July 2, "

There have been three deaths, namely : —

Thomas Smith, died	.	.	.	March 22, 1874
Charles Maffat, "	.	.	.	April 18, "
Henry H. Brown, "	.	.	.	July 2, "

The following-named persons furnished surety :

James Millen .	.	.	.	Jan. 13, "
William Dalton	.	.	.	March 3, "
John Adams, escaped	.	.	.	May 9, "

The following-named persons were discharged by order of the Municipal Court, after serving three months : —

Daniel McLaughlin	.	.	.	Jan. 3, 1874
John O'Brien	.	.	.	" 15, "
Hugh Devlin .	.	.	.	" 31, "
Jeremiah Byrnes	.	.	.	March 3, "
Thomas Haynes	.	.	.	" 4, "
C. Henry Pfaff	.	.	.	" 20, "
Edward McCann	.	.	.	" 24, "
John Wilson . .	.	.	.	" 28, "
John McCann	.	.	.	" 28, "
George Colligan	.	.	.	" 31, "
John Little .	.	.	.	April 14, "
Owen Rooney	.	.	.	May 4, "
Martin Ragan .	.	.	.	" 4, "
Patrick Whalen	.	.	.	" 4, "
Elizabeth Gleason	.	.	.	" 9, "
John Driscoll .	.	.	.	" 16, "
Elizabeth Ring	.	.	.	June 30, "

The following persons have paid fines and costs and been discharged : —

Patrick Parks	Jan. 8, 1874
Michael Gilding	“ 29, “
John Mahoney	March 2, “
George H. Devine	“ 3, “
Maria Spear	“ 17, “
Martha Kane	“ 17, “
Hugh Davis	“ 26, “
Patrick Burke	April 21, “
James Foley	“ 25, “
Mary O'Brien	May 9, “
James Picket	June 1, “
William Sullivan	“ 2, “
William Patterson	“ 19, “
James Nolan	July 2, “

RECAPITULATION.

Pardoned by the Governor	11
Discharged by order of the Court	16
Paid fines and costs	14
Died	3
Furnished surety	2
Discharged on expiration of sentence	396
	443

The prisoners are employed in making brushes, slippers, contract clothing, and doing the necessary work about the institution.

Only one prisoner occupies a cell at one time. The punishments are, deprivation of bed and solitary confinement. The prison is kept clean and comfortable. Good discipline is maintained. The health of the prisoners has been very good. At present there are 125 more prisoners than cells to keep them in.

LUNATIC HOSPITAL.

The Committee visited the Lunatic Hospital, at South Boston, on the same day. At the previous inspection, the 18th December, 1873, there were under treatment : —

Males	.	.	.	.	.	.	.	100
Females	.	.	.	.	.	.	.	92
								— 192

Admitted since : —

Males	.	.	.	.	.	.	.	15
Females	.	.	.	.	.	.	.	10
								— 25

Under care and treatment during the term . . . 227

Discharged during the term : —

Men	.	.	.	.	.	.	.	11
Women	.	.	.	.	.	.	.	5
								— 16

Remaining at inspection of July 16, 1864 . . . 201

Of those discharged, there —

Recovered, three ; improved, three ; unimproved, three ; died, six ; and was unfit, one.

The case termed “unfit,” was a case of *drunkenness*. Of the improved and unimproved, four were taken home to die by permission of the Board of Directors.

Causes of Death. — General paralysis, three ; disease of heart, congestion of lungs, and exhaustion, each one. Total, six.

All the requirements of the law, in regard to the patients, the buildings and the grounds, have, the Committee believe, been faithfully complied with, in every particular.

HOUSE OF REFORMATION.

The Committee visited the House of Reformation at Deer Island, on the 22d of July, 1874.

The number remaining at the last report, December 18th,	
1873, was	284
Number committed from December 19, 1873, to July	
22, 1874, inclusive	129
	413
Number discharged from December 19, 1873, to July	
22, 1874, inclusive	98
Number remaining July 22, 1874	315
Boys*	289
Girls	26
	315

The causes of discharge were as follows :—

Expiration of sentence	58
Pardoned by Directors	39
Died	91
	98

The offences for which the prisoners were committed are as follows :—

Habitual truancy	38
Larceny	36
Juvenile vagabondage	28
Breaking and entering and larceny	11
Disobedience and stubbornness	5

Obtaining property by false pretences	3
Assault and battery	3
Attempting to pick pockets	2
Embezzlement	1
Receiving stolen property	1
Drunkenness	1
	129

HOUSE OF INDUSTRY.

The Committee visited the House of Industry on the same day.

The number remaining at the date of the last report,	
December 18, 1873, was	683
Number committed from December 19, 1873, to July	
22, 1874, inclusive	4,050
	4,733
Number discharged from December 19, 1873, to July	
22, 1874, inclusive	4,001
Number remaining July 22, 1874	732
Men	432
Women	300
	732

The causes of discharge were as follows:—

By expiration of sentence	3,089
By payment of fines and costs	759
Pardoned by Municipal Court	91
“ “ Directors	51
Died	8
Sent to Insane Asylum	2
Escaped	1
	4,001

The following are the offences for which the prisoners were committed : —

Drunkenness	3,270
Common drunkenness	177
Larceny	174
Assault and battery	113
Vagabond	85
Idle and disorderly	81
Fornication	44
Common night-walkers	41
Maliciously breaking glass	20
“ injuring property	9
Disturbing the peace	7
Keeping a noisy and disorderly house	7
Common beggars	5
Obtaining property by false pretences	4
Keeping house of ill-fame	4
Disobedience and stubbornness	3
Evading payment of railroad fare	1
Discharging pistol in the street	1
Assault on an officer	1
Embezzlement	1
Common railer and brawler	1
Violating railroad regulations	1

4,050

All the requirements of law appear to have been complied with, both in the House of Reformation* and the House of Industry.

SUFFOLK COUNTY JAIL.

On the 16th day of July, 1874, the Committee inspected the Jail in this County. The total number of prisoners held therein on that day was one hundred and seventy-five.

The total number committed since the last inspection, Dec. 28, 1873, was seventeen hundred and ninety-nine.

There have been no deaths, no sickness, and no escapes during that time.

The buildings and surrounding walls are in good order and condition, except the large windows of the three wings of the Jail. The sashes of the windows were originally made of material too light and frail for the purpose, and have caused much trouble.

In the second semi-annual report of the Inspectors of Prisons for the year 1873, the attention of the government was called to the importance of providing accommodations for the female prisoners, separate and apart from those furnished to the male prisoners. Under the present arrangements the portion of the building occupied by females is subject to observation by those passing along the corridors. To remedy that defect it was suggested that the north wing be partitioned off for exclusive use by the female prisoners, and that they be waited upon by persons of their own sex.

In the early part of February last an order was passed by the Board of Aldermen referring so much of the report of the Inspectors as relates to alterations in the Suffolk County Jail to the Committee on County Buildings, with instructions to furnish estimates of the expense of making the proposed alterations, so that provision could be made in the annual appropriation bill. That Committee did not comply with the instructions; no appropriation has been made, and it does not appear that any action has been taken upon the subject.

Your Committee would again call the attention of the gov-

ernment to this matter, and urge the importance of taking immediate measures to make the proposed alterations. In the words of the Inspectors, of last year, "The present system of male oversight and attendance is degrading to the females, and should not be longer continued."

Respectfully submitted,

For the Committee,

LEONARD R. CUTTER,

Chairman.

City Document. — No. 72.

CITY OF BOSTON.



REPORT
OF THE
CITY SOLICITOR
TO
JUNE 30, 1874.

IN BOARD OF ALDERMEN, July 20, 1874.
Laid on the table and ordered to be printed.

Attest :

S. F. McCLEARY,

City Clerk.

CITY OF BOSTON.

CITY SOLICITOR'S OFFICE,

BOSTON, June 30, 1874.

To the Honorable the City Council:—

The undersigned respectfully submits the following report of all the suits and legal proceedings, to which the City of Boston is party, pending at the time of his last report, or since instituted, with a statement of the causes of action, the Courts wherein the several cases are pending, and the action that has been had in them respectively.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Charles P. Bent <i>vs.</i> City of Boston.	April, 1862.	Sup. Jud. Middlesex.	Alleged trespass in digging and carrying away earth from certain streets in South Boston.
Boston & Worcester R. R. Company <i>vs.</i> Same.	June, 1855.	Do. Suffolk.	To vacate the discontinuance of Kneeland street.
Same <i>vs.</i> Mayor and Aldermen of Boston.	Do.	Do.	Do.
George Peabody <i>vs.</i> Same.	Feb. 1856.	Do.	To vacate the discontinuance of Foster street.
Martha W. Lufkin <i>vs.</i> City of Boston.	June, 1868.	Do.	Injury in street.
John McBarron <i>vs.</i> Same.	Sept. 1868.	Do.	Do.
City of Roxbury <i>vs.</i> Town of West Roxbury.	1866.	Superior. Norfolk.	To recover expenses paid in a certain suit.
Same <i>vs.</i> Rogers.	1867.	Do.	To recover for abating a nuisance.

Result.	Remarks.
	This action was brought to test the validity of the original laying out of streets in South Boston.
	Commenced in Superior Court and removed. Sept. 1869. Verdict for defendant. Plaintiff took exceptions which are still pending.
April T., 1874. Verdict and judgment for pl'ff. Damages, \$725.00 Costs, 91.97 \$816.97 Ex'on April 22, .35	Commenced in Supreme Court and removed.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Edmund O'Malley <i>vs.</i> City of Boston.	May, 1869.	Sup. Jud.	Injury in street.
George Gardner, Pet'r, <i>vs.</i> Same.	Oct. 1869.	Superior.	Extension of Avon street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of assess- ment of betterment for ex- tension of Avon street.
Proprietors India Wharf, Petitioners, <i>vs.</i> Same.	Do.	Do.	Laying out Atlantic ave.
Edward Blake, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	Do.
Charles H. Warren, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Same, <i>et al.</i> , Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.
Propr's T Wharf, Pet'rs, <i>vs.</i> Same.	Jan. T. 1870.	Do.	Do.

Result.	Remarks.
	Removed from Superior Court. April T., 1871. Verdict for defendant. Plaintiff filed exceptions which are still pending.
	Jan. 1871. Verdict for defendant. July, 1871. Verdict set aside and new trial ordered. Jan. 1872. Referred to arbitrators. Arbitrators made award Oct. 1873. Motion to recommit.
	Jan. 1872. Referred to arbitrators.
Jan. T., 1874. Dis - missed without costs.	
Do.	
Do.	
	Jan. 1874. Partial settlement acknowledged.

Names of Parties.	Date of Process.	Court.	Cause of Action.
George N. Faxon, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	Jan. T. 1870.	Superior.	Laying out Atlantic ave.
Charles V. Caples <i>vs.</i> Same.	Do.	Sup. Jud.	Injury in street.
W. Elliott Woodward, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	Damages for preventing plaintiffs from moving a building through Harrison avenue, which plaintiffs' bought of the city.
Lebbeus W. Smith & wife <i>vs.</i> Same.	March, 1870.	Do.	Injury in street.
Moses B. Wildes, Pet'r, <i>vs.</i> Same.	Jan. 1870.	Superior.	Widening Hanover street.
Henry Barrett, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Nathaniel Whiting, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Fort Hill.
Boston Seamen's Friend Society, Pet'rs, <i>vs.</i> Same.	July, 1870.	Do.	Widening Purchase st.

Result.	Remarks.																																								
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<table> <tr> <td>Jan. T., 1874. Judgment for pet'rs.</td><td></td></tr> <tr> <td>Wildes, Dam. \$41,193.82</td><td></td></tr> <tr> <td>Costs, 184.42</td><td></td></tr> <tr> <td></td><td>\$41,378.24</td></tr> <tr> <td>Haley et al. Dam. \$2,692.27</td><td></td></tr> <tr> <td>Costs, 15.10</td><td></td></tr> <tr> <td></td><td>\$2,707.37</td></tr> <tr> <td>Bradford, Dam. \$3,073.38</td><td></td></tr> <tr> <td>Costs, 16.70</td><td></td></tr> <tr> <td></td><td>\$3,090.08</td></tr> <tr> <td>Boynton et al. D'm. \$2,950.44</td><td></td></tr> <tr> <td>Costs, 15.10</td><td></td></tr> <tr> <td></td><td>\$2,965.54</td></tr> <tr> <td>Fogg & Sawyer D'm. \$4,302.73</td><td></td></tr> <tr> <td>Costs, 15.10</td><td></td></tr> <tr> <td></td><td>\$4,317.83</td></tr> <tr> <td>Sleeper & Cromack, Dam. \$2,766.04</td><td></td></tr> <tr> <td>Costs, 17.30</td><td></td></tr> <tr> <td></td><td>\$2,183.34</td></tr> <tr> <td>6 Ex'ons,</td><td>\$1.50</td></tr> </table>	Jan. T., 1874. Judgment for pet'rs.		Wildes, Dam. \$41,193.82		Costs, 184.42			\$41,378.24	Haley et al. Dam. \$2,692.27		Costs, 15.10			\$2,707.37	Bradford, Dam. \$3,073.38		Costs, 16.70			\$3,090.08	Boynton et al. D'm. \$2,950.44		Costs, 15.10			\$2,965.54	Fogg & Sawyer D'm. \$4,302.73		Costs, 15.10			\$4,317.83	Sleeper & Cromack, Dam. \$2,766.04		Costs, 17.30			\$2,183.34	6 Ex'ons,	\$1.50	Haley et al., Charles R. Bradford, Boynton et al., Sleeper & Cromack and Fogg & Sawyer made parties. Oct. 1872. Verdict for petitioners. Motion for new trial overruled.
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Names of Parties.	Date of Process.	Court.	Cause of Action.
Susan D. Reynolds, Pet'r, <i>vs.</i> City of Boston.	July, 1870.	Superior.	Grading Fort Hill.
Catherine Sullivan, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Central Wharf Co., Pet'rs, <i>vs.</i> Same.	Do.	Do.	Taking plaintiffs' land for a drain.
Alpheus Hardy, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Purchase st.
Jerome G. Kidder, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Nathaniel C. Nash, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Samuel J. Noble, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do. Widening Eliot street.

Result.	Remarks.
April T., 1874. Dis - missed.	Settled by Committee on Sewers.
Jan. T., 1874. Judg- ment on award for pet'rs. Damages, \$7,007.00 Costs, 251.63 \$7,258.63 Ex'on Jan. 8, '74, .25	Referred to arbitrators.
Do. Damages, \$19,551.99 Costs, 290.95 \$19,842.94 Ex'on Jan. 8, '74, .25	Do.
	Wm. Sohier made a party. Reported to Su- preme Court. Report discharged. Jan. T., 1874. Verdict for Sohier, \$16,972.10; for Noble, \$1,605.- 40. Noble moves for new trial. Motion pending.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Daniel Loy <i>vs.</i> City of Boston.	July, 1870.	Sup. Jud.	Injury while employed in blasting for the city.
Jeremiah Donovan and wife <i>vs.</i> Same.	Oct. 1870.	Do.	Injury in street.
Nathaniel Whiting, Pet'r, <i>vs.</i> Same.	Do.	Superior.	Grading Fort Hill.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Adeline M. Whiting, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Simon Lewis, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Federal street.
George F. Adams, Pet'r, <i>vs.</i> Same	Do.	Do.	Widening Hanover st.

Result.	Remarks.
	Removed from Superior Court.
April T., 1874. Dis- missed.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Association for Relief of A. & I. Females, Pet'rs, <i>vs.</i> City of Boston.	Oct. 1870.	Superior.	Widening Hanover st.
William Sohler, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Eliot street.
John Stearns, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of better- ment for widening Oliver street.
William H. Milton, Pet'r, <i>vs.</i> Same.	Do.	Do.	Laying out a street from Guild Row to Warren st.
Abner Phelps, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of better- ment for Oliver street wid- ening.
Charles H. Phelps, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Isaac Sweetser, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Maurice O'Connell, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Maurice O'Connell, Pet'r, <i>vs.</i> City of Boston.	Oct. 1870.	Superior.	For revision of betterment for Oliver street widening.
Same, Pet'r, <i>vs.</i> Same.	Do.	Sup. Jud.	To enjoin the city from collecting betterment for Oliver street widening.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate above assessment of betterment.
John Stearns, Pet'r, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment for Oliver street widening.
Same <i>vs.</i> Same.	Do.	Do.	To enjoin city from collecting above betterment.
Boston Seamen's Friend Society <i>vs.</i> Same.	Do.	Do.	Do.
Isaac Sweetser, Pet'r, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment for widening Oliver street.
Mary E. Shute, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Proprietors India Wharf, Petitioners, <i>vs.</i> City of Boston.	Jan. 1871.	Superior.	For revision of betterment for laying out Atlantic avenue.
Propr's Long Wharf, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
John H. Fisher, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Wm. Minot, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Hanover st.
Jacob Bancroft, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Hanover street.
Same, Pet'r, <i>vs.</i> Same.	Jan. 1871.	Do.	Do.
B. F. Edmands, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Commercial Wharf Co., Petitioners, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for laying out Atlantic avenue.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Moses B. Wildes, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	Jan. 1871.	Superior.	For revision of betterment for laying out Hanover st.
City of Boston <i>vs.</i> Henry W. Fuller.	Do.	Do.	To recover an assessment for a sewer in Roxbury.
Patrick McDonald, Pet'r, <i>vs.</i> City of Boston.	April, 1871.	Do.	Grading Fort Hill.
Charles R. Thayer, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for laying out Atlantic ave.
Sarah J. Melledge, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
City of Boston <i>vs.</i> Roger Drury.	Do.	Do.	To recover for ashes and loam sold to defendant.
Propr's T Wharf, Pet'rs, <i>vs.</i> City of Boston.	July, 1871.	Do.	For revision of betterment for laying out Atlantic ave.
Margaret Wooley, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
April T., 1874. Dis- missed.	
	Mason made a party plaintiff.
Oct., 1873. Jury assess betterment to be paid by petitioner at \$1,250; no interest, no costs.	
	Jan., 1874. Partial settlement acknowledged.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Abram F. Block, Pet'r, <i>vs.</i> City of Boston.	July, 1871.	Superior.	For revision of betterment on Eliot street widening.
Moses B. Wildes, Pet'r, <i>vs.</i> Same.	Sept. 1871.	Sup. Jud.	For certiorari to vacate assessment of betterment for widening Hanover st.
Shawmut Cong. Church, Petitioners, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment on Tremont street widening.
Eighth Cong. Church, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Children's Mission to Destitute, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Mary A. Harriman <i>vs.</i> Same.	Do.	Do.	Injury in street.
Edward McAwley <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
April T., 1873. Assessment by jury of betterment to petitioner's estate, \$4,300. Amount to be paid by pet'r to be fixed by the Court.	
	Removed from Superior Court.
April T., 1874. Judgment for plaintiff. Damages, \$2,252.00 Costs, 80.16 <u>\$2,332.16</u> Ex' on June 25, .25	April T., 1872. Verdict for plaintiff. Defendant excepted. April T., 1874. Defendant's exceptions overruled.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Mercantile Wharf Co., Petitioners, <i>vs.</i> City of Boston.	Oct. 1871.	Superior.	For revision of betterment for laying out Atlantic avenue.
Wm. H. Milton, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Zeigler st.
Thomas J. Dunbar, <i>vs.</i> Same.	Do.	Do.	To recover taxes paid under protest.
Charles Roberts, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Chambers and Green streets.
Boylston Market Assoc'n, Petitioners, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Boylston street.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Sup. Jud.	For certiorari to vacate assessment of betterment for widening Boylston street.
Eliza C. Brown, Pet'r, <i>vs.</i> Same.	Do.	Superior.	For revision of betterment for laying out Atlantic avenue.
Wm. H. Milton, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Zeigler street.

Result.	Remarks.
	Jan., 1874. Referred.
	Heard, and reported to Supreme Court on plaintiff's exceptions.
	Oct. 1873. Referred.
Jan. T., 1874. Pet'r's paid full amount of the assessment.	
Heard, and reported to full bench. March, 1874. Dismissed.	
	Jan. 1874. Referred.

Names of Parties.	Date of Process.	Court.	Cause of Action.
John H. Thorndike, Pet'r, <i>vs.</i> City of Boston.	Oct. 1871.	Superior.	Widening Kingston street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
John Spaulding, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Josiah Quincy, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for laying out Atlantic avenue.
Edward Blake, Petitioner, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Hanover street.
Charles D. Bickford, Pet'r, <i>vs.</i> Same.	Jan. 1872.	Do.	Obstructing Stony brook.
Thomas J. Dunbar <i>vs.</i> Same.	Do.	Do.	Trespass for laying a sewer through plaintiff's land on Wakulla street.
William A. Prescott, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Hanover street.

Result.	Remarks.
April T., 1874. Judg- ment on award for pet'rs. Damages, \$55,810.37 Costs, 375.61 \$56,185.98 Ex'on April 9, .25	Referred.
Do. Damages, \$19,742.57 Costs, 261.02 \$20,003.59 Ex'on April 9, .25	Do.
Jan. T., 1874. Dis- missed.	Jordan & Marsh and A. Garcelon joined as plaintiffs.
April T. 1874. Judg- ment for plaintiff for \$1. by agreement, and judg- ment satisfied.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
William A. Prescott, Pet'r, <i>vs.</i> City of Boston.	Jan. 1872.	Superior.	For revision of betterment for widening Hanover street.
Tr. Perman't Peace Fund, Petitioners, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Kingston street.
Trustees First Methodist Ep. Church, Pet'rs, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Hanover street.
Nathaniel C. Nash, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Purchase st.
G. F. Burekhardt, <i>vs.</i> Same.	April, 1872.	Sup. Jud.	Grading Prentiss and Halleck streets.
Model Lodging House As. <i>vs.</i> Same.	Do.	Do.	Taking Suffolk-street district.
Adelia Harriman <i>vs.</i> Same.	Do.	Do.	Injury in street.
Stephen B. Simons, <i>et al.</i> <i>vs.</i> Same.	Do.	Do.	Alleged breach of contract to manufacture plaintiff's goods at House of Correction.

Result.	Remarks.
	A. Hardy <i>et al.</i>, Trustees, made party plaintiffs. April, 1873, referred. January, 1874, referee's award. Exceptions filed by plaintiff.
	Removed from Superior Court.
	This case is disposed of, except the petitions of Rebecca C. Billings, which are still pending. The petition of Francis G. Whiston was dismissed June 11, 1874.
April T., 1874. Verdict and judgment for plaintiff. Damages, \$5,503.66 Costs, 132.01 \$5,635.67 Ex'on June 11, .25	Tried three times. On the first two trials the juries disagreed.
	Removed from Superior Court.

Names of Parties.	Date of Process.	Court.	Cause of Action.
George F. Hawley, <i>et al.</i> <i>vs.</i> City of Boston.	April, 1872.	Sup. Jud.	Alleged breach of contract to manufacture plaintiff's goods at House of Correction.
City of Boston <i>vs.</i> E. A. Knowlton.	Do.	Do.	For injunction against violation of the Building Act.
Wm. H. Boardman, Pet'r, <i>vs.</i> City of Boston.	Do.	Superior.	Discontinuance of Sturgis street.
Delano March <i>et al.</i> <i>vs.</i> Same.	Do.	Do.	Alleged breach of contract to manufacture plaintiff's goods at House of Correction.
J. H. Thorndike, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of assessment for widening Kingston street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Boston Baptist Bethel So. Petitioners, <i>vs.</i> Same.	Do.	Do.	For revision of assessment for widening Hanover street.
William Minot, Jr., Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of assessment for widening Kingston street.

Result.	Remarks.
	Removed from Superior Court.
Injunction issued.	
Jan. T., 1874. Dismissed.	
Jan. T., 1874. Referee's award. Betterment to be paid by pet'rs, \$1,858.00 And int., 243.40 And award accepted, \$2,101.40 Ex'on for pl'ff's costs, April 10, 1874, \$139.90 25	Do.
Jan. T., '74. Referee's award. Betterment, \$3,100.00 And int., 406.10 \$3,506.10 And award accepted. Ex'on for pl'ff's costs, April 10, '74, \$160.69 25	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Elizabeth Leonard, Pet'r, <i>vs.</i> City of Boston.	April, 1872.	Superior.	Grading Prentiss and Hal- leck streets.
Edward Blake, Pet'r, <i>vs.</i> Same.	July, 1872.	Superior.	For revision of better- ment for removal of Scol- lay's building.
Louis Hepinenze <i>vs.</i> Same.	Do.	Do.	Injury in street.
Edwin Wright <i>vs.</i> Same.	Sept. 1872.	Sup. Jud.	Alleged breach of contract in relation to employing the plaintiff to arrange the Pro- bate records.
Elizabeth Kendall <i>vs.</i> Same.	Do.	Do.	Injury by the fall of a bust in Music Hall.
Same <i>vs.</i> Chas. E. Jenkins, <i>et al.</i>	Do.	Do.	Do.
Mary Murphy <i>vs.</i> City of Boston.	Do.	Do.	Injury in street.
A. J. Kilbourne, Pet'r, <i>vs.</i> Same.	Do.	Do. Middlesex.	Widening Washington av. and Malden street in Chelsea.

Result.	Remarks.
	1873. Jan. T. Tried. Jury disagreed. 1873. April T. Verdict for defendant. Case reported on plaintiff's exceptions to full Court.
	April T., 1874. Verdict ordered for defendant, and case reported to full Court.
	April T., 1874. Defendants were committee of the city government upon the celebration at Music Hall.
	Reported to the full Court.
	Tried to a sheriff's jury, who assessed damages. Defendant excepted to rulings of the sheriff.

Names of Parties.	Date of Process.	Court.	Cause of Action.
I. Otto S. Cuntz, Pet'r, <i>vs.</i> City of Boston.	Oct. 1872.	Sup. Jud. Suffolk.	For revision of betterment by widening Kingston street.
Lucy H. Spooner, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Columbus avenue.
James Teevan, Pet'r, <i>vs.</i> Same.	Do.	Do.	Discontinuance of Church street.
Elizabeth L. Francis, Pet'r, <i>vs.</i> Same.	Do.	Superior.	Extension of Columbus avenue.
Jeffrey Richardson, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Caleb W. Loring, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Kingston street.
A. J. Wilkinson, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Devonshire street.
B. F. Brooks, <i>et als.</i> , Tr., Petitioners, <i>vs.</i> Same.	Do.	Do.	For revision of better- ment for widening Kingston street.

Result.	Remarks.
Jan. T., 1874. Dis- missed.	
Do.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Jane E. Brock, Pet'r, <i>vs.</i> City of Boston.	Oct. 1872.	Superior.	Widening Washington and Adams streets.
Michael Connolly <i>vs.</i> Same.	Do.	Do.	Injury by falling from Dover-street bridge draw.
David Cobb <i>vs.</i> Same.	Do.	Do.	For work and material furnished on Church street district.
Asahel A. Smith and wife <i>vs.</i> Same.	Do.	Do.	Do.
Wm. P. Hunt <i>vs.</i> Same.	Do.	Do.	To recover land on Fed- eral street, of which plaintiff alleges defendant has dis- seized him.
John Duncan and wife <i>vs.</i> Same.	Do.	Sup. Jud.	Injury in street.
Charles H. Taylor <i>vs.</i> Same	Jan. 1873.	Do.	For destruction of Merch- ants' building with gunpow- der.
Willard Manuel, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	For breach of contract for work on Suffolk-street dis- trict.

Result.	Remarks.
April T., 1874. Verdict and judgment for pet'r. Damages, \$3,000.00 Costs, 71.77 <u> </u> \$3,071.77 Ex'on May 1, .25	
	April T., 1874. Tried. Verdict for defendant. Plaintiff's exceptions allowed and filed.
	Sent to an auditor. April T., 1874. Auditor reported. Plaintiff moves that case be recommitted or report amended.
	Do.
	Removed from Superior Court.
	Sent to an auditor.

Names of Parties.	Date of Process.	Court.	Cause of Action.
John Souther <i>vs.</i> Same.	Jan. 1873.	Sup. Jud.	For breach of contract for work on Fort Hill dis- trict.
Fanny Bonner <i>vs.</i> Same.	Do.	Do.	Injury in street.
John S. Laming, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	To prevent use of build- ing on Pine Island as a Small-pox hospital.
City of Boston <i>vs.</i> Charles Blake.	Do.	Do.	For an injunction under the Building Act.
Geo. Wm. Phillips, Pet'r, <i>vs.</i> City of Boston.	Do.	Superior.	For revision of betterment for extension of Shawmut avenue.
Edwin M. Bigelow, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Franklin King, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of better- ment for extension of Pur- chase street.
Lewis D. Boise, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Devonshire street.

Result.	Remarks.
April T., 1874. Judgment on award for plaintiff. Damages, \$8,750.00 Costs, 353.05 <u>\$9,103.05</u> Ex'on June 19, .25	Referred to an assessor, who assessed the plaintiff's damages at \$8,750.
	April T., 1874. Verdict for plaintiff for \$4,000.
	A. D. Puffer, McCormack and Curtis joined. Jan. T., 1874. Tried, and jury found a verdict and assessed damages for the pet'rs. McCormack accepted, and case is reported to the Supreme Court. Puffer's damages, \$30,451.54; Boise, \$4,531.08; McCormack, \$1,618.50; Curtis, \$863.20.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Joseph Ballister, Pet'r, <i>vs.</i> City of Boston.	Jan. 1873.	Superior.	Extension of Cottage st.
Judith C. Gardner, <i>vs.</i> Same.	April, 1873.	Do.	Injury in street.
Jane Logue <i>vs.</i> Same.	Do.	Do.	For services as small-pox nurse.
Ebenezer E. Hill <i>vs.</i> Same.	Do.	Do.	For use of plaintiff's house as a small-pox hospital.
Frederick G. Curtis, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Devonshire street.
Israel G. Whitney, Pet'r, <i>vs.</i> Same.	Do.	Do.	To recover taxes paid under protest.
Maurice O'Connell, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Sturgis street.
Moses Williams, <i>et al.</i> Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Washington st.

Result.	Remarks.
Jan. T., 1874. Judgment by agreement for plaintiff for \$500, and judgment satisfied.	Settled by the Water Board.
April T., 1874. Verdict and judgment for defendant, by order of Court.	
January T., 1874. Dismissed.	
Do.	
Jan. T., 1874. Verdict and judgment for plaintiff. Damages, \$2,649.42 Costs, 45.15 \$2,694.57 Ex'on March 24, .25	

Names of Parties.	Date of Process.	Court.	Cause of Action.
William A. Wood, Pet'r, <i>vs.</i> City of Boston.	April, 1873.	Superior.	Extension of Emerson st.
Edward E. Salisbury, Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Washington st. and Summer st.
Lewis N. Spaulding <i>vs.</i> Same.	Do.	Sup. Jud.	To cancel a deed to city for alleged breach of con- dition.
City of Boston <i>vs.</i> Julius Hincke.	Do.	Do.	For injunction against violation of the Building Act.
Same. <i>vs.</i> H. T. Litchfield.	Do.	Do.	Do.
Same. <i>vs.</i> Susan R. Eldridge.	Do.	Do.	Do.
Same. <i>vs.</i> Horace Quigley, <i>et al.</i>	Do.	Do.	Do.
Same. <i>vs.</i> Albert Brown.	Do.	Do.	Do.

Result.	Remarks.
April T., 1874. Dis- missed.	
Do.	
	March, 1874. Heard and bill dismissed. Plain- tiff appealed to the full Court.

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> Thomas Minns.	April, 1873.	Sup. Jud.	For injunction against violation of the Building Act.
Same <i>vs.</i> George A. Mudge, <i>et als.</i>	Do.	Do.	Do.
Same <i>vs.</i> R. T. Paine, Jr.	Do.	Do.	Do.
Benj. F. White, Pet'r, <i>rs.</i> City of Boston.	Do.	Superior.	Extension of Oliver st.
Andrew C. Mudge, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Washington & Summer sts.
Ira Bradley, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Devonshire street.
Julia A. Henry, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Benj. F. Brooks, <i>et als.</i> , Trs, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
April T., 1874. Dis-	
missed.	
Jan. T., 1874. Dis-	Consolidated with petition of B. F. Brooks, <i>et al.</i>
missed.	(below).
April T., 1874. Verdict and judg- ment for petitioners. For Henry, Dam., \$9,031.50 Costs, 48.78 —\$9,080.28 Ex'on June 5, .25 For Comer, Dam., \$26,095.33 Costs, 27.13 —\$26,122.46 Ex'on June 3, .25	Jos. Comer made a party.
Jan. T., 1874. Verdict and judgment for petitioners. For Comer, Dam., \$13,758.31 Costs, 88.42 —\$13,846.73 Ex'on March 2, .25 For Bradley, Dam., \$13,755.02 Ex'on March 3, .25 For Brooks, <i>et. al.</i> , Dam., \$11,994.43 Costs, 41.37 —\$12,035.80 Ex'on March 7, .25	Do. I. Bradley made a party.

Names of Parties.	Date of Process.	Court.	Cause of Action.
James Lawrence, Pet'r, <i>vs.</i> City of Boston.	April, 1873.	Superior.	Widening Congress and Milk streets, at extension of Pearl street.
Cornelius Ryan, Ex'or, Petitioner, <i>vs.</i> Same.	Do.	Do.	Grading Ontario street.
Wm. Minot, Tr., Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Federal street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Arch street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Milk street.
Frederick Trull, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Blue Hill ave.
City of Boston, Pet'r, <i>vs.</i> Nathan Robbins.	Do.	Do.	For review of a judgment rendered against it.
Arthur N. Whiting, Pet'r, <i>vs.</i> City of Boston.	Do.	Do.	For revision of better- ment for widening Sturgis street.

Result.	Remarks.
Jan. T., 1874. Dis- missed.	
Jan. T., 1874. Dis- missed.	
Jan. T., 1874. Verdict and judgment for pet'rs. For Parker, <i>et al.</i> , Dam., \$4,808.90 For Trull, lessee, Dam., 1,000 Two Ex'ons Feb. 4, .50	F. H. Parker, <i>et al.</i> , owners, made parties.
Writ of review granted and issued, returnable July Term, 1874.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Arthur N. Whiting, <i>et als.</i> , Petitioners, <i>vs.</i> City of Boston.	April, 1873.	Superior.	For revision of betterment for widening Purchase street.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do. for widening and grading Hamilton street.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do. for grading Washington square.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Arthur N. Whiting, <i>et als.</i> , Petitioners, <i>vs.</i> City of Boston.	April, 1873.	Superior.	For revision of betterment for grading Washington sq.
James Leeds, Petitioner, <i>vs.</i> Same.	Do.	Do.	Taking land for open square at junction of Con- gress, Pearl, and Milk sts.
Jerome G. Kidder, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for widening Purchase st.
Shawmut National Bank, Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Congress street.
Junius Q. Hatch, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Washington street.
Julia A. Gould <i>vs.</i> Same.	Do.	Sup. Jud.	Injury in street.
Margaret Whelen, Adm'x, <i>vs.</i> Same.	Do.	Do.	Do.
Marie A. Leyon <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
Jan. T., 1874. Dis- missed.	
Jan. T., 1874. Judg- ment on award for assess- ment to be paid to city. \$1,937.23 Costs, 24.07 Ex'on Jan. 10, .25	Referred.
	George D. Howe, <i>et als.</i> , owners, and Wm. T. Lawrence, sub-lessee, made parties. Reported to Supreme Court to determine the rights of the lessees to maintain their action.
Jan. T., 1874. Judgment on award. For Hatch, dam., \$8,044.44 costs, 776.24 \$8,820.68 For Holton, dam., \$25,979.57 costs, 3.75 \$25,983.32 2 Ex'ons Jan. 17, .60	Holton, <i>et als.</i> , lessees, made parties. Referred.
	Removed from Superior Court.
	Do.
	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
George Wilson <i>vs.</i> City of Boston.	April, 1873.	Sup. Jud.	Injury in street.
James M. Cutler, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	Destruction of building by gunpowder in fire of Nov., 1872.
Emma H. Crosby <i>vs.</i> Same.	Do.	Do.	Injury in street.
Charles V. Caples <i>vs.</i> Same.	Do.	Do.	Do.
Children's Mission to Des- titute, Petitioners, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment for extension of Shawmut avenue.
City of Boston <i>vs.</i> Metropolitan Horse Rail- road Co.	Do.	Do.	To recover damages paid by city on judgment against it in suit brought by Thos. M. Prentiss for injury on de- fendant's track.
William Smith, <i>et al.</i> , <i>vs.</i> City of Boston.	Do.	Do.	To recover for work and material for Swett-st. Hos- pital.
Robert Johnson <i>vs.</i> Same.	Do.	Do.	Injury by caving in of sewer on Warren street.

Result.	Remarks.
	Removed from Superior Court. April T., 1874. Tried. Verdict for plaintiff \$4,995. Case reported to full court on defendant's exceptions.
April T., 1874. Tried. Verdict for defendant.	
	Commenced in Superior Court in Jan., 1870, and removed.
April T., 1874. Verdict and judgment for plff's. Damages, \$11,692.75 Costs, 51.32 \$11,744.07 Ex'on May, 1874, .25	Removed from Superior Court.
	Do. Reported to full Court.

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> Horace Quigley, <i>et al.</i>	April, 1873.	Sup. Jud.	For an injunction under the building act.
Frederick O. Snow, <i>et al.</i> , <i>vs.</i> City of Boston.	July, 1873.	Superior.	Injury to a horse at East Boston Ferry.
Justin E. Andrews & wife <i>vs.</i> Same.	Do.	Do.	Injury in street.
Adaline F. Phillips <i>vs.</i> Same.	Do.	Do.	Do.
City of Boston <i>vs.</i> A. T. Stearns, <i>et al.</i>	Do.	Do.	To recover a penalty for breach of provisions of the building act.
Same <i>vs.</i> S. C. Calef, <i>et al.</i>	Do.	Do.	Do.
Catherine Barrett <i>vs.</i> City of Boston.	Do.	Do.	Injury in street.
Wm. H. Barrett <i>vs.</i> Same.	Do.	Do.	Loss of services of plaintiff's wife by injury in street.

Result.	Remarks.
Jan. T., 1874. Trial and verdict for defendant. Motion for new trial overruled.	
April T., 1874. Judgment by agreement for plaintiff For \$400.00 No costs. Ex'on May 14, 1874, .25	Settled by Committee on Claims.
April T., 1874. Judgment for plaintiff, by agreement, for \$250. No costs, and judgment satisfied.	
January T., 1874. Dismissed.	
Jan. T., 1874. Judgment for city, \$22.57, and judgment satisfied.	
April T., 1874. Verdict and judgment for plaintiff. Damages, \$721.00 Costs, 64.85 \$785.85 Ex'on June 11, 1874, .25	
Jan. T., 1874. Judgment for defendant.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Joseph K. Melcher & wife <i>vs.</i> Same, <i>et als.</i>	July, 1873.	Superior.	Sending female plaintiff to small-pox hospital without cause.
J. W. Converse, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	Do.	Do.	For revision of betterment by laying out Atlantic ave.
John Roessle, Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Pynchon st.
Children's Mission to Destitute, Petitioners, <i>vs.</i> City of Boston.	Do.	Do.	For revision of betterment by extension of Shawmut avenue.
J. H. Thorndike, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Summer street.
Elizabeth Taylor, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Pearl street.
Geo. P. Davis, <i>et al.</i> , Petitioners, <i>vs.</i> Same	Oct. 1873.	Do.	Widening Milk street.
Dudley Williams, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
April T., 1874. Judgment on award for pet'rs. Damages, \$21,417.24 Costs, 195.74 \$21,612.98 Ex'on April 10, .25	Referred.
	C. C. Walworth & Co. made partners. April T., 1874. Verdict for Taylor, \$60,818.59; for Walworth & Co., \$6,676.50. Motion for a new trial overruled.
April T., 1874. Judgment on award for pet'rs. Damages, \$8,610.71 Costs, 136.70 \$8,747.41 Ex'on May 28, .25	Referred.
Do. Damages, \$26,493.30 Costs, 136.70 \$26,630.00 Ex'on May 28, .25	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Eliza Whitwell, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	Oct. 1873.	Superior. .	Extension of Washington street.
Ebben Libbey, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Federal street.
Geo. P. Davis, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Washington st.
Charles H. Fiske, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Otis street.
Albert H. Kelsey, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extending Washington st.
W. Elliott, Woodward, Petitioner, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for the extension of Harrison avenue.
Joel Gray, <i>et al.</i> , Pet'rs, <i>vs.</i> Same.	Do.	Do.	Extension of Washington street.
John McKenna, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
Jan. T., 1874. Dismissed.	J. B. Judkins and A. C. Stevens, lessees, made parties.
April T., 1874. Judgment by agreement for amount of original award, and interest from May 1st, 1874. Damages, \$1,506.25 Costs, 34.70 \$1,540.95 Ex'on May 27, .25	
April T., 1874. Judgment on award for pet'rs. Damages, \$18,694.26 Costs, 136.70 \$18,830.96 Ex'on, May 28, .25	Referred.
Jan. T., 1874. Dismissed.	Settled by Committee on Streets.
April T., 1874. Judgment for petitioner. Damages, \$90,339.68 Costs, 488.98 \$90,828.66 Ex'on April 11, .25	
Jan. T., 1874. Dismissed.	Settled by Committee on Streets.
	Administrator of Martin McKenna made a party, Jacob Bock joined.

Names of Parties.	Date of Process.	Court.	Cause of Action.
James M. Beebe, Pet'r, <i>vs.</i> Same.	Oct. 1873.	Superior.	Extension of Washington street.
Charles A. Newert <i>vs.</i> Same.	Do.	Do.	Injury in street by a telegraph wire.
Thomas J. Dunbar <i>vs.</i> Fred'k U. Tracy, Treas.	Do.	Do.	To recover taxes paid under duress.
Same <i>vs.</i> Francis V. Bulfinch.	Do.	Do.	Do.
Same <i>vs.</i> Same.	Do.	Do.	Alleged false imprisonment on a warrant for collection of taxes.
Asa F. Cochran <i>vs.</i> Same.	Do.	Sup. Jud. Middlesex.	To recover taxes alleged to have been illegally assessed.
Jacob Sleeper, Petitioner, <i>vs.</i> City of Boston.	Do.	Superior.	Widening Hawley street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Arch street.

Result.	Remarks.
April T., 1874. Dis- missed. -	Settled by Committee on Streets.
Jan. T., 1874. Dis- missed.	Settled by Committee on Streets.
Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Jacob Sleeper, Petitioner, <i>vs.</i> City of Boston.	Oct. 1873.	Superior.	Widening Milk street.
A. J. C. Sowden, <i>et als.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Extension of Washington street.
Francis W. Loring, Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Congress st.
Daniel Lee, Petitioner, <i>vs.</i> Same.	Do.	Do.	Extension of Washington street.
Moses B. Wildes, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Rollins A. Kempton, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Sarah L. Cunningham, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Federal street.
Same, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Widening Milk street.

Result.	Remarks.
Jan. T., 1874. Dis- missed.	Settled by Committee on Streets.
Jan. T., 1874. Dis- missed.	Settled by Committee on Streets.
April T., 1874. Dis- missed.	Settled by Committee on Streets.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Edward McGuckian, Pet'r, <i>vs.</i> City of Boston.	Oct. 1873.	Superior.	Grading Halleck street.
Catherine McCully, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Brighton street.
B. F. Brooks, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Extension of Arch street.
Wm. F. Weld, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Federal street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Franklin st.
Wm. R. Clark, Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Broad street.
John C. Howe, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Extension of Pearl street.
William Childs, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Pond street.

Result.	Remarks.
April T., 1874. Dis- missed.	Settled by Committee on Streets.
Jan. T., 1874. Dis- missed.	
Do.	
April T., 1874. Judg- ment on award for pet'r. Damages, \$109,000.00 Costs, 501.05 \$109,501.05 Ex'on May 28, .25	Referred.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Benj. F. Paine, Pet'r, <i>vs.</i> City of Boston.	Oct. 1873.	Superior.	Extension of Washington street.
Edwin M. Montague <i>vs.</i> Same.	Do.	Do.	For taking land in the Church-street District.
Denis Lyons, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Summer street.
P. J. Lattemoor, <i>et al.</i> , <i>vs.</i> Same.	Do.	Municipal.	Preventing plaintiffs from discharging a cargo of coal.
Wamesit Power Co. <i>vs.</i> Same.	Dec. T. 1873.	Superior. Middlesex.	Trespass on plaintiffs' land, and interference with their water power.
Same <i>vs.</i> Cochituate Water Board.	Do.	Do.	Do.
Ann J. Phillips <i>vs.</i> City of Boston.	Jan. T. 1874.	Do. Suffolk.	To recover amount awarded for widening Cottage st.
John Curtis & wife <i>vs.</i> Same.	Do.	Do.	Injury to plaintiff's house by overflow from a common sewer.

Result.	Remarks.
Jan. T., 1874. Judg- ment for pet'r. Damages, \$1,475.99 Costs, 13.11 Ex'on, \$1,489.10 .25	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Samuel K. Bailey <i>vs.</i> City of Boston.	Jan. T. 1874.	Superior. Suffolk.	Injury to horse and wagon by horse-car track.
City of Boston <i>vs.</i> Jonas B. Hildreth.	Do.	Do.	For ashes sold to defend- ant.
Wm. Dehon, Pet'r, <i>vs.</i> City of Boston.	Do.	Do.	Widening Congress street.
Larkin Dunton <i>vs.</i> Same.	Do.	Do.	For salary as teacher of Normal school.
City of Boston <i>vs.</i> North British Fire Ins. Co.	Do.	Superior.	To recover insurance on Swett-street Small-pox hos- pital.
Same <i>vs.</i> Firemen's Fund Ins. Co.	Do.	Do.	Do.
Same <i>vs.</i> Commerce Fire Ins. Co.	Do.	Do.	Do.
Prop's Liverpool Wharf, Petitioners, <i>vs.</i> City of Boston.	Do.	Do.	Widening Broad street.

CITY SOLICITOR'S REPORT.

Result.	Remarks.
Settled before entry. Defendants paid full amount of the policy.	
Do.	
Do.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Herman B. Inches, Pet'r, <i>vs.</i> City of Boston.	Jan. T. 1874.	Superior.	Widening Broad street.
Richard Baker, Jr., Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Federal st.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Franklin street.
Leonard F. Lawrence <i>vs.</i> Same.	Do.	Do.	Widening Water street.
William R. Clark <i>vs.</i> Same, <i>et al.</i>	Do.	Do.	Notice of taking of a deposition in perpetuum relating to Rowe's wharf.
Elizabeth L. Bennett, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	Do.	Do.	For revision of betterment by widening Market street, Brighton.
Eliza A. Parkman, <i>et al.</i> , Petitioners, <i>vs.</i> Same	Do.	Do.	Widening Congress st.
Wm. C. Murdock, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Washington st.

Result.	Remarks.
	R. E. Apthorp joined as party.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Wm. C. Reeves, Pet'r, <i>vs.</i> City of Boston.	Jan. T. 1874.	Superior.	Widening Washington st. at cor. of Boylston street.
Wm. F. Lawrence, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Congress st.
Elizabeth W. Eaton, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Washington st. at cor. of Boylston street.
Edmund Rice, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment by widening Market street, Brighton.
Almira W. Bennett, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Mary Wigglesworth, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Hawley street.
John M. Way, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of a sewer assessment in Copeland st.
Wm. H. Tobey <i>vs.</i> Same.	Feb. T. 1874.	Do. Plymouth.	Injury to wagon by defect in street near Neponset bridge.

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> Christopher Lee.	March, 1874.	Sup. Jud.	For injunction under the building act.
Trustees' of Tufts College <i>vs.</i> City of Boston, <i>et als.</i>	April T. 1874.	Do.	To determine rights in a passageway.
James Thomson & wife <i>vs.</i> City of Boston.	Do.	Do.	Injury in street.
William Holliday <i>vs.</i> Same.	Do.	Do.	Overflowing plaintiff's land and undermining his house by opening a ditch.
Eugenie A. Stevens <i>vs.</i> Same.	Do.	Do.	Injury in street.
Eugene O'Neil & wife <i>vs.</i> Same.	Do.	Do.	Do.
John W. Leatherbee <i>vs.</i> Same.	Do.	Do.	Declaration not filed.
Lucia M. Peabody, Pet'r for mandamus, <i>vs.</i> School Com. of Boston.	Do.	Do.	To compel School Committee to admit petitioner to a seat in the board.

Result.	Remarks.
	Temporary injunction issued. Building taken down.
	The City is made a party as having a remote possible interest merely.
	Removed from Superior Court.
	Do.
June, 1874. The full Court decide that they have not jurisdiction in this case, and petition is dismissed.	June, 1874. Argued, and awaiting decision.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Albert Palmer, <i>et als.</i> , Pet'r for mandamus, <i>vs.</i> School Com. of Boston.	April T. 1874.	Sup. Jud.	To compel School Committee to admit Miss Peabody to a seat in the board.
John McCann <i>vs.</i> City of Boston.	Do.	Do.	Injury on Charlestown bridge.
Jos. A. Harwood, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	Destroying building on Nov. 9, 10, 1872.
Timothy Gunning <i>vs.</i> Same.	Do.	Superior.	For labor furnished to town of West Roxbury.
Karen Gunning <i>vs.</i> Same	Do.	Do.	Do.
Hubert Mee <i>vs.</i> Same.	Do.	Do.	Do.
John Kelley <i>vs.</i> Same.	Do.	Do.	Do.
Patrick Corlis <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
Dismissed.	
	Removed from Superior Court.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Patrick Condry <i>vs.</i> City of Boston.	April T. 1874.	Superior.	For labor furnished to town of West Roxbury.
Patrick Finnerty <i>vs.</i> Same.	Do.	Do.	Do.
John McDonald <i>vs.</i> Same.	Do.	Do.	Do.
Patrick Oates <i>vs.</i> Same.	Do.	Do.	Do.
Thomas Duffey <i>vs.</i> Same.	Do.	Do.	Do.
William Galvin <i>vs.</i> Same.	Do.	Do.	Do.
James M. Keith, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of sewer assessment on Shawmut av.
Trs. Chapel of Good Shepherd, <i>vs.</i> Same.	Do.	Do.	To recover taxes paid under protest.

Names of Parties.	Date of Process.	Court.	Cause of Action.
J. W. Sylvester, <i>vs.</i> City of Boston.	April, 1874.	Superior.	Services as small-pox nurse.
Catherine H. Faunce <i>vs.</i> Same.	Do.	Do.	Trespass, and using plaintiff's land as a public street.
Trinity Church <i>vs.</i> Same.	Do.	Do.	To recover taxes paid under protest.
Cornelius Cronin <i>vs.</i> Same.	Do.	Do.	Grading Havre street.
Harvard College, Pet'r, <i>vs.</i> Same	Do.	Do.	Widening Arch street.
George D. Wells, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Cocheco Manufac'ing Co., Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Water street.
Josiah Quincy, <i>et als.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Extension of Quincy pl.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Bridget McCarthy, Pet'r, <i>vs.</i> City of Boston.	April T. 1874.	Superior.	Extension of Quincy pl.
John P. Treadwell, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment by widening Kneeland st.
Same, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
City of Boston <i>vs.</i> Geo. P. Chapin.	Do.	Do.	For use and occupation of the Brighton Poor House farm.
Same <i>vs.</i> Cumberland Brown Stone Co.	Do.	Municipal.	For use and occupation of land on Albany street.
James Tarpy <i>vs.</i> City of Boston.	Do.	Do.	To recover for labor fur- nished to town of West Roxbury.
Patrick Gardner <i>vs.</i> Same.	Do.	Do.	Do.
John Goode, Jr., <i>vs.</i> Same.	Do.	Do.	Do.

Result.	Remarks.
April T., 1874. Dis- missed.	Settled by Committee on Streets.
April T., 1874. Judg- ment for plaintiff on de- fault.	

Tried, June, 1874.
Awaiting decision of
Court.

There are in all 204 of these suits against the City for labor furnished to town of West Roxbury, each suit to recover the amount of about five to ten dollars. The names of the other plaintiffs are omitted here, as the cases are similar, and will all be determined by the judgment in a few of them.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Francis M. Johnson, Pet'r, <i>vs.</i> City of Boston.	Apr. T. 1874.	Superior.	Widening Congress st.
Continental Life Ins. Co., of New York, Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Water street.
Mary A. Hall, Petitioner, <i>vs.</i> Same.	Do.	Do.	For revision of betterment by South Market street ex- tension.
Mary H. Potter, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Thomas Dana, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
Wallace F. Robinson, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
David Snow, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
Asa Jacobs, <i>et al.</i> , Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Thos. W. Nickerson, Petitioner, <i>vs.</i> City of Boston.	Apr. T. 1874.	Superior.	For revision of betterment by South Market street ex- tension.
Geo. W. B. Taylor, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Water street.
Aaron C. Baldwin, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Essex street.
Wm. T. Litchfield, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Broad street.
Hiram A. Campbell, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Cabot street.
John Mulligan, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Andrew Gallagher, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
John A. Voisin, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Alvin D. Puffer, Pet'r, <i>vs.</i> City of Boston.	Apr. T. 1874.	Superior.	For revision of betterment for extension of Devonshire street.
John Codman, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
Ivory G. Curtis, Pet'r, <i>vs.</i> Same.	Do.	Do.	For revision of betterment for extension of Columbus avenue.
John B. Regan, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Essex st.
Alexr. G. Bowditch, Assignee, <i>vs.</i> Same.	June T. 1874.	U. S. Dis- trict Court.	Blowing up building and destroying plaintiff's prop- erty in fire of Nov. 9, 1872.
C. W. White, <i>et al.</i> , <i>vs.</i> Same.	June, 1874.	Municipal.	For repairing mowing machine.

Result.	Remarks.

J. P. HEALY.

City Document.—No. 73.

CITY OF BOSTON.



LAYING OUT AND WIDENING
OF
CHARLES STREET,
WARD SIXTEEN.

1874.

CITY OF BOSTON.

IN BOARD OF STREET COMMISSIONERS, Aug. 3, 1874.

Resolved, That the safety and convenience of the inhabitants of the city require that CHARLES STREET, in Ward Sixteen, should be laid out and widened, and that the grade thereof should be established; and for that purpose it is necessary to take and lay out as a public street or way of the said city, a parcel of land belonging to THE CITY OF BOSTON AND OTHERS, bounded as follows, viz. : Northwardly by the northerly line of the proposed laying out of Charles street, thirty feet wide, on two lines, five hundred and forty-five and $\frac{66}{100}$ feet, and three hundred fifty-four and $\frac{34}{100}$ feet; eastwardly by land hereinafter described as taken from Mary A. Chase to widen Charles street, five and $\frac{1}{100}$ feet; again northwardly by Ditson street, forty and $\frac{4}{100}$ feet; westwardly by land of Jacob Foster, thirty-five and $\frac{3}{100}$ feet; southwardly by the southerly line of the proposed laying out of Charles street, thirty feet wide, on two lines, three hundred ninety-four and $\frac{66}{100}$ feet, and five hundred twenty-six and $\frac{83}{100}$ feet; and eastwardly by Dorchester avenue, thirty-two and $\frac{58}{100}$ feet.

A parcel of land belonging to JOHN KEENE, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Charles street, on a curve of fifteen feet radius, seventeen and $\frac{65}{100}$ feet; northwardly by said line of widening, one hundred thirty-nine and $\frac{40}{100}$ feet; westwardly by land hereafter described as taken from Hannah M. Fairbanks, four and $\frac{35}{100}$ feet; southwardly by the present line of Charles street,

one hundred forty-seven and $\frac{2.5}{100}$ feet; and eastwardly by Dorchester avenue, fifteen and $\frac{4.3}{100}$ feet; containing seven hundred and thirty-two square feet, more or less.

A parcel of land belonging to HANNAH M. FAIRBANKS, bounded as follows, viz.: Northwardly by the proposed line of widening of Charles street, seventy-five and $\frac{6.5}{100}$ feet; westwardly by land hereinafter described as taken from the City of Boston, four and $\frac{4.5}{100}$ feet; southwardly by the present line of Charles street, seventy-five and $\frac{4.0}{100}$ feet; and eastwardly by land before described as taken from John Keene, four and $\frac{3.5}{100}$ feet; containing three hundred and thirty-two square feet, more or less.

A parcel of land belonging to THE CITY OF BOSTON (*formerly belonging to Samuel Phipps, jr., John B. White, Mary A. Hammond and John P. Schallenbach*), bounded as follows, viz.: Northwardly by the proposed line of widening of Charles street, two hundred sixty-three and $\frac{3.2}{100}$ feet; westwardly by land hereinafter described as taken from Jacob H. Currier, five feet; southwardly by the present line of Charles street, two hundred sixty-two and $\frac{8.3}{100}$ feet; and eastwardly by land before described as taken from Hannah M. Fairbanks, four and $\frac{4.5}{100}$ feet; containing twelve hundred and ninety-four square feet, more or less.

A parcel of land belonging to JACOB H. CURRIER, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Charles street, fifty-five and $\frac{7.0}{100}$ feet, and sixty-three and $\frac{6.0}{100}$ feet; westwardly by land hereinafter described as taken from Levi Perry, five feet; southwardly by the present line of Charles street, fifty-nine and $\frac{1.2}{100}$ feet, and sixty and $\frac{1.8}{100}$ feet; and eastwardly by land before described as taken from the City of Boston, five feet; containing five hundred and fifty-seven square feet, more or less.

A parcel of land belonging to LEVI PERRY, bounded as follows, viz.: Northwardly by the proposed line of widening of Charles street, seventy and $\frac{4.4}{100}$ feet; westwardly by

land hereinafter described as taken from the City of Boston, four and $\frac{82}{100}$ feet; southwardly by the present line of Charles street, seventy and $\frac{44}{100}$ feet; and eastwardly by land before described as taken from Jacob H. Currier, five feet; containing three hundred and forty-five square feet, more or less.

A parcel of land belonging to THE CITY OF BOSTON (*formerly belonging to William T. Adams and Lydia A. Andrews*), bounded as follows, viz.: Northwardly by the proposed line of widening of Charles street, one hundred twenty-three and $\frac{76}{100}$ feet; westwardly by land hereinafter described as taken from Catherine A. Mitchell, five and $\frac{70}{100}$ feet; southwardly by the present line of Charles street, one hundred twenty-three and $\frac{73}{100}$ feet; and eastwardly by land before described as taken from Levi Perry, four and $\frac{82}{100}$ feet; containing six hundred and nine square feet, more or less.

A parcel of land belonging to CATHERINE A. MITCHELL, bounded as follows, viz.: Northwardly by the proposed line of widening of Charles street, fifty and $\frac{30}{100}$ feet; westwardly by land hereinafter described as taken from Mary A. Chase, five and $\frac{80}{100}$ feet; southwardly by the present line of Charles street, fifty and $\frac{33}{100}$ feet; and eastwardly by land before described as taken from the City of Boston, five and $\frac{70}{100}$ feet; containing two hundred and fifty-five square feet, more or less.

A parcel of land belonging to MARY A. CHASE, bounded as follows, viz.: Northwardly by the proposed line of widening of Charles street, fifty-one feet; westwardly by land before described as taken from the City of Boston and others, to lay out Charles street, five and $\frac{10}{100}$ feet; southwardly by the present line of Charles street, fifty and $\frac{72}{100}$ feet; and eastwardly by land before described as taken from Catherine A. Mitchell, five and $\frac{80}{100}$ feet; containing two hundred and fifty-six square feet, more or less.

A parcel of land belonging to THE CITY OF BOSTON (*for-*

merly belonging to Joshua D. Whorf), bounded as follows, viz.: Southwardly by the proposed line of widening of Charles street, one hundred sixty and $\frac{47}{100}$ feet; westwardly by land of Jacob Forster, five feet; northwardly by the present line of Charles street, one hundred sixty and $\frac{4}{100}$ feet; and eastwardly by land hereinafter described as taken from unknown owners, five and $\frac{30}{100}$ feet; containing eight hundred and eighteen square feet, more or less.

A parcel of land belonging to A PERSON, OR PERSONS, UNKNOWN (*being a portion of Freeman street, so-called*), bounded as follows, viz.: Southwardly by the proposed line of widening of Charles street, thirty and $\frac{12}{100}$ feet; westwardly by land before described as taken from the City of Boston, five and $\frac{30}{100}$ feet; northwardly by the present line of Charles street, thirty and $\frac{12}{100}$ feet; and eastwardly by land hereinafter described as taken from the City of Boston, five and $\frac{2}{100}$ feet; containing one hundred and fifty-three square feet, more or less.

A parcel of land belonging to THE CITY OF BOSTON (*formerly belonging to J. H. Robinson, Lemuel C. Pope, William L. Moulton, and Ephraim W. Farr*), bounded as follows, viz.: Southwardly by the proposed line of widening of Charles street, three hundred ninety-nine and $\frac{41}{100}$ feet; westwardly by land before described as taken from unknown owners, five and $\frac{2}{100}$ feet; northwardly by the present line of Charles street four hundred feet; and eastwardly by land hereinafter described as taken from the heirs of Emily Southwick, four and $\frac{90}{100}$ feet; containing nineteen hundred and seventy square feet, more or less.

A parcel of land belonging to the HEIRS OF EMILY SOUTHWICK, bounded as follows, viz.: Southwardly by the proposed line of widening of Charles street, sixty-three and $\frac{53}{100}$ feet; westwardly by land before described as taken from the City of Boston, four and $\frac{20}{100}$ feet; northwardly by the present line of Charles street, sixty-three and $\frac{83}{100}$ feet; and east-

wardly by land hereinafter described as taken from Ira Foster, four and $\frac{9.5}{100}$ feet; containing three hundred and ten square feet, more or less.

A parcel of land belonging to IRA FOSTER, bounded as follows, viz.: Southwardly by the proposed line of widening of Charles street, two hundred fifty-four and $\frac{9.0}{100}$ feet; westwardly by land before described as taken from the heirs of Emily Southwick, four and $\frac{9.5}{100}$ feet; northwardly by the present line of Charles street, two hundred sixty-seven and $\frac{5.0}{100}$ feet; eastwardly by Dorchester avenue, fifteen and $\frac{4.3}{100}$ feet; and southwestwardly, on a curve of six and $\frac{6.0}{100}$ feet radius, by said line of widening of Charles street, thirteen and $\frac{1.0}{100}$ feet; containing fourteen hundred and fifteen square feet, more or less.

AND WHEREAS due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, IT IS THEREFORE ORDERED, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, and the grade of said street is established, according to a plan of the said laying out and widening and profile of the grade made by T. W. Davis, City Surveyor, dated May 13, 1873, and deposited in his office. And this Board doth adjudge that the expense of laying out, widening and establishing the grade of the said Charles street, as aforesaid, will amount to thirty-four hundred sixty and $\frac{8.4}{100}$ dollars; and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

*Estimate of Damages Occasioned by Laying-out, Widening and Establishing the Grade of
Charles Street, 1874.*

ESTATES.	Description.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of build- ings before laying out and widening.	Value of build- ings after lay- ing out and widening.	Value of old material to be cut off.	Damages to buildings, owners, and occupants.	Total amount to each estate.	Remarks.
City of Boston	Charles street.									
John Keene		732	.50	\$366 00				\$50 00	\$416 00	
Hannah M. Fairbanks		332	.30	99 60				10 00	109 60	
City of Boston		1,294	.30	388 20				54 00	442 20	
Jacob H. Currier		557	.30	167 10				25 00	192 10	
Levi Perry		345	.30	103 50				12 00	115 50	
City of Boston		609	.30	182 70				27 00	209 70	
Catherine A. Mitchell		255	.30	76 50				10 00	86 50	
Mary A. Chase		256	.30	76 80				12 00	88 80	
City of Boston		818	.28	229 04				20 00	249 04	
Unknown Owners	Freeman street	153								
City of Boston		1,970	.27	531 90				36 00	567 90	
Heirs of Emily South- wick		310	.25	77 50				15 00	92 50	
Ira Foster		1,415	.40	566 00	4,000 00	3,700 00		325 00	891 00	
		9,046		\$2,861 34	\$4,000 00	\$3,700 00		\$5,600	\$3,460 84	

City Document.—No. 74.

CITY OF BOSTON.



REPORT OF COMMITTEE

ON

HIGHLAND STREET RAILWAY.

1874.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Aug. 3, 1874.

The Committee on Paving, to whom was recommitted the petition of the Highland-street Railway Company, for the right to enter upon and use that part of the location and tracks of the Metropolitan Railroad Company in Tremont street, between Temple place and Cornhill, and in said Cornhill to Washington street, and in said Washington street to Temple place, respectfully report the accompanying order.

For the committee,

L. R. CUTTER.

Chairman.

Upon the petition of the Highland-street Railway Company praying that they may be authorized and empowered to enter upon and use with their horses and cars that part of the location and tracks of the Metropolitan Railroad Company laid in Tremont street, from Temple place to Cornhill, and in said Cornhill to Washington street, and in said Washington street to said Temple place, and after due notice and hearing thereon, it is

Ordered, That the Highland-street Railway Company shall have the right, subject to the provisions of law, and until otherwise ordered by the Board of Aldermen, to enter upon and use with their horses and cars, the tracks of the Metropolitan Railroad Company, located and laid as follows, viz. : the easterly track located and laid in Tremont street, from Temple place to Cornhill, and in said Cornhill to Washington

street, and in said Washington street, from Cornhill to said Temple place.

The right to enter upon and use the said tracks granted by this order is upon the condition that the number of cars or trips run by said Highland-street Railway Company over said circuit shall not exceed twelve in any one hour.

Also upon the condition that the said Highland-street Railway Company shall accept this order, and shall agree in writing to comply with the provisions and conditions herein contained, and file said acceptance with the City Clerk within thirty days of the date of its passage ; otherwise it shall be null and void.

City Document. — No. 75.

CITY OF BOSTON.



REPORT OF COMMITTEE

ON

MIDDLESEX RAILROAD.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Aug. 3, 1874.

The Committee on Paving, to whom was recommitted the petition of the Middlesex Railroad Company for the right to enter upon and use the "Circuit" so called, being that part of the location and tracks of the Metropolitan Railroad Company in Washington street between Cornhill and Boylston street, and in said Boylston street between said Washington street and Tremont street, and in said Tremont street between said Boylston street and said Cornhill, respectfully report the accompanying order.

For the committee,

L. R. CUTTER,

Chairman.

Upon the petition of the Middlesex Railroad Company praying that they may be authorized and empowered to enter upon and use with their horses and cars the "circuit" so called, being that part of the location and tracks of the Metropolitan Railroad Company laid in Washington street from Cornhill to Boylston street, and in said Boylston street to Tremont street, and in said Tremont street to said Cornhill, and after due notice and hearing thereon, it is

Ordered, That the Middlesex Railroad Company shall have the right, subject to the provisions of law, and until otherwise ordered by the Board of Aldermen, to enter upon and use with their horses and cars the tracks of the Metro-

politan Railroad Company, located and laid in Washington street, between Cornhill and Boylston street, and in said Boylston street between said Washington street and Tremont street, and in said Tremont street between said Boylston street and said Cornhill, and also the tracks in Temple place.

The right to enter upon and use the said tracks granted by this order is upon the condition that the number of cars or trips run by said Middlesex Railroad Company over said circuit shall not exceed twelve in any one hour.

Also, upon the condition that the said Middlesex Railroad Company shall accept this order, and shall agree in writing to comply with the provisions and conditions herein contained, and file said acceptance with the City Clerk within thirty days of the date of its passage; otherwise, it shall be null and void.

City Document.—No. 76.

CITY OF BOSTON.



AUDITOR'S MONTHLY EXHIBIT.



AUGUST 5, 1874.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS
FOR 1874-75.

MONTHLY EXHIBIT.

OFFICE OF THE AUDITOR OF ACCOUNTS, }
CITY HALL, August 5, 1874. }

TO THE HONORABLE CITY COUNCIL:

GENTLEMEN, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1874-75, as shown in the books in his office, August 1, 1874, including the August draft, being four months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,

Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Addition to City Hospital	\$190,000 00		\$190,000 00
Advertising	6,000 00	\$957 43	5,042 57
Annuities	512 00	170 00	342 00
Armories	25,000 00	7,616 51	17,383 49
Assessors' Department	104,729 00	61,185 24	43,543 76
Bells and Clocks	6,475 00	677 13	5,797 87
Bennett Grammar School-house, } Brighton	120,530 50	16,425 68	4,104 82
Board of Health	102,100 00	17,323 21	84,776 79
Boston Harbor	10,000 00	1,504 71	8,495 29
Bridges	52,000 00	13,508 49	38,491 51
Brighton Fire Alarm extension	6,460 00	2,439 32	4,020 68
Cedar Grove Cemetery			
Add Revenue rec'd, \$4,881.36	\$4,218 40	9,985 13	\$885.37 provided for.
Charles River and Warren Bridges	45,102 00	2,574 26	42,527 74
Chestnut Hill Driveway	18,500 00	6,168 97	12,331 03
City Hospital	120,000 00	39,346 49	80,653 51
City Registrar's Department	12,400 00	3,169 60	9,230 40
Common, etc.	115,700 00	53,392 19	62,307 81
Contingent Funds, viz.:			
Joint Com'itees of the City Council	4,000 00	1,192 95	2,807 05
Mayor	1,500 00	101 00	1,399 00
Board of Aldermen	1,500 00	1,203 00	297 00
Common Council	3,000 00	1,452 87	1,547 13
County of Suffolk	350,000 00	106,408 03	243,591 97
East Boston Ferries	270,000 00	87,157 91	182,842 09
Elevator, City Hall	12,000 00	177 00	11,823 00
Engineer's Department	30,881 00	8,530 40	22,350 60
Engine House and Land, Dover St.	45,000 00	20,000 00	25,000 00
Engine House and Land, Parker St.	40,000 00		40,000 00
Engine House and Land, Fulton St.	45,000 00		45,000 00
Evergreen Cemetery			
Add Revenue received, \$496	\$738 00	426 75	807 25
Fire Department	695,742 00	258,281 94	437,460 06
Fire Alarm Telegraph	43,215 00	8,468 79	34,746 21
Grammar School-house, Dudley } District	449,930 99	43,035 20	6,895 79
Grammar School-house, Everett } District, Ward 16	20,000 00		20,000 00
Grammar School-house, Ward 15, } Building	541,865 20	18,580 00	23,285 20
Additional Land	5,000 00	5,000 00	
<i>Carried forward</i>	\$2,499,099 09	\$796,460 20	\$1,708,901 62

¹ Brought from last year, \$2,530 50

² Balance of revenue from last year, 1,218 40

³ Balance of revenue from last year, 138 00

⁴ Brought from last year,

⁵ Brought from last year,

\$19,930 99

21,865 20

AUDITOR'S MONTHLY EXHIBIT.

5

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
<i>Brought forward</i>	\$2,499,099 09	\$796,460 20	\$1,708,901 62
Grammar School-house, Washing- ton Village:			
Building	120,000 00		120,000 00
Land	35,000 00		35,000 00
Grammar School-house, Winthrop District, Charlestown:			
Building	75,000 00		75,000 00
Land	50,000 00		50,000 00
Health Department	446,607 00	141,764 41	304,842 59
Highland street Stable	20,673 82	16,471 76	4,202 06
Holton Library Building, Brighton	18,096 50	7,250 83	10,845 67
Incidental Expenses	87,000 00	35,705 59	51,841 21
Add Income Trust Funds, \$546.80 }			
Inspection of Buildings	22,000 00	7,145 16	14,854 84
Interest and Premium	2,055,000 00	498,903 33	1,556,096 67
Lamps	455,500 00	124,599 67	330,900 33
Markets	11,195 00	3,199 59	7,995 41
Mount Hope Cemetery	26,311 74	16,302 65	15,102 98
Add Revenue rec'd, \$5,093.89 }			
Mystic Water Works		69,566 11	\$19,430.80 prov'd for.
Add Revenue rec'd, \$50,135.31 }			
New Engine House, Brighton	3,000 00	2,516 06	483 94
Overseers of the Poor	101,825 00	16,998 04	84,826 96
Old Claims	1,500 00	305 10	1,194 90
Paving, etc.	1,300,000 00	356,482 12	943,517 88
Police	865,000 00	265,905 44	599,094 56
Police Station-house, Ward 16	43,983 63	6,287 06	37,696 57
Police Station-house, West Roxbury	14,310 50	13,616 41	694 09
Primary School-house, City Point .	15,000 00		15,000 00
Primary School-house, Cottage Place, Roxbury:			
Building	50,000 00		50,000 00
Land	26,000 00		26,000 00
Primary School-houses, East Boston	18,539 56	16,884 93	1,654 63
Primary School-house, Gibson District:			
Building	15,000 00		15,000 00
Land	6,000 00		6,000 00
Primary School-house, Lawrence Dis- trict:			
Building	50,000 00		50,000 00
Land	25,000 00		25,000 00
Primary School-house, Quincy St. .	50,000 00		50,000 00
Printing and Stationery	38,000 00	10,351 01	27,648 99
Public Baths	40,000 00	16,471 21	23,528 79
<i>Carried forward</i>	\$8,584,641 84	\$2,423,186 68	\$6,242,924 69

¹ Brought from last year, \$15,673 82
² Brought from last year, 3,096 50
³ Bal. of revenue brought from last year, 2,811 74
Transferred from the Reserved Fund, 6,000 00

⁴ Brought from last year, \$38,983 63
⁵ Brought from last year, 9,310 50
⁶ Brought from last year, 1,339 56
Transferred from the Reserved Fund, 5,200 00

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. unexpended.
<i>Brought forward</i>	\$8,584,641 84	\$2,423,186 68	\$6,242,924 69
Public Buildings	107,000 00	37,828 29	69,171 71
Public Institutions, viz.:			
House of Industry	210,000 00	80,407 79	129,592 21
House of Correction	110,000 00	42,007 66	67,992 34
Lunatic Hospital	65,000 00	21,214 88	43,785 12
Pauper Expenses	60,000 00	16,607 46	43,392 54
Steamboat "Henry Morrison" .	20,000 00	10,660 97	9,339 03
Office Expenses	9,000 00	2,613 32	6,386 68
New Laundry Building, Deer Island	15,000 00	3,924 68	11,075 32
Public Lands	6,000 00	2,965 11	3,034 89
Public Library	135,000 00	40,922 25	94,077 75
Public Library Building Improvem't	30,000 00	48 76	29,951 24
Quarantine Department	20,000 00	4,516 84	15,483 16
Registration of Voters and Election Expenses }	20,000 00	1,524 05	18,475 95
Reserved Fund	1284,900 00		284,900 00
Roxbury High School-house . . .	30,000 00	6,029 00	23,971 00
Salaries	1104,900 00	34,301 62	70,598 38
Schools and School-houses, viz.:			
School Instructors	1,256,600 00	403,028 42	853,571 58
School expenses, School Committee	119,400 00	56,244 53	63,155 47
Salaries officers, School Committee	35,400 00	11,567 00	23,833 00
School-houses, Public Buildings	332,000 00	91,968 32	240,031 68
Sealers of Weights and Measures .	7,400 00	2,134 50	5,265 50
Sewers	300,000 00	59,629 98	240,370 02
Sheds, Health Department	10,000 00		10,000 00
Sinking Fund Commissioners . . .	2,800 00	675 00	2,125 00
Surveyor's Department	59,000 00	19,624 19	39,375 81
Water Works	787,500 00	290,483 18	497,016 82
Water Works, Interest and Premium	711,000 00	62,990 00	648,010 00
West Boston and Cragie's Bridges	109,809 04	29,906 59	79,902 45
Widening Streets	300,000 00	44,128 94	255,871 06
Total Appropriations, \$13,645,143 00		\$3,801,140 01	\$10,122,680 40
Balances from 1873-4, 197,207 88		Less provided for	20,316 17
Add Revenue,	\$13,842,350 88		
	61,153 36		\$10,102,364 23
	\$13,903,504 24		

¹ \$3,900 00 transf'd from Res'd Fund to Salaries. ² Brought from last year, \$80,309 04.
5,200 00 " " Primary School-houses, East Boston.
6,000 00 " " Mount Hope Cemetery.

SPECIAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans) . .	\$432,315 59	\$58,411 85	\$373,903 74
Atlantic Avenue (loans)	131,494 18	35,000 00	96,494 18
Beach Street (loans)	251,000 00	.....	251,000 00
Broadway Bridge Foundations (loan)	110,295 00	648 21	109,646 79
Broadway Extension (loans)	80,680 21	.....	80,680 21
Burnt District (loans)	1,641,647 88	450,115 23	1,191,532 65
Canton Street Grading (loan)	1,225 20	.....	1,225 20
Columbus Avenue Extension (loan)	21,931 80	80 44	21,851 36
Devonshire Street Extension (loans)	92,163 57	35,207 59	56,955 98
Eastern Avenue and Bridge (loan)	193,122 00	412 67	192,709 33
Engine and Hook and Ladder House, Ward 5 (loans)	17,951 34	17,763 05	188 29
Engine House, Mason Street (transfer)	5,537 55	1,519 39	4,018 16
Fort Hill Improvement (loans)	80,477 35	57,492 14	22,985 21
Harrison Avenue Extension (loan)	45,960 47	.....	45,960 47
Home for Poor, Deer Island (transfer)	150,000 00	.....	150,000 00
Hook and Ladder House No. 4, (reserved fund) . .	5,557 31	5,535 98	21 33
Hose House, Longwood (loan)	15,421 75	14,527 69	894 06
Memorial Monument, Boston Common (transfer) . .	75,000 00	.....	75,000 00
New Lunatic Hospital (loan and appropriation) . .	103,044 04	.....	103,044 04
Northampton Street District (loan and transfer) . .	202,573 67	1,196 62	201,377 05
Oliver Street (revenue)	1,748 74	5,748 75	\$4,000.01 adv'd by Treasurer.
Parker Hill Reservoir (loan)	128,309 22	33,942 75	94,366 47
Police Station House, South Boston (loan)	9,128 22	6,717 59	2,410 63
Primary School House, Newbury Street (loan) . . .	40,000 00	.....	40,000 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	.....	10,000 00
Small-pox Hospital (loan)	35,987 96	6,744 32	29,243 64
Soldiers' Relief	149,280 36	22,298 74	126,981 62
Suffolk Street District (loans and transfer)	16,819 11	672 26	16,146 85
Ticknor Bequest (transfer)	2,060 51	.....	2,060 51
Washington Street Extension (loan)	179,103 77	19,259 12	159,844 65
Water Street Grade Damages (transfer)	15,546 17	.....	15,546 17
Water Works, Wards 13 to 16, and Extension to Wards 17 and 19 (loan)	60,000 00	5,667 17	54,332 83
Widening and Grading Dudley and other Streets (loan)	7,035 56	225 00	6,810 56
Widening Eliot Street (loan and transfer)	13,458 99	.....	13,458 99
Widening Federal Street (loans)	1,103 03	.....	1,103 03
Widening Hanover Street, No. 2 (loans)	34,570 39	.....	34,570 39
Widening Warren Street (loan)	39,306 60	19,399 92	19,906 68
Widening Washington and Essex Streets (loan) . .	77,472 99	.....	77,472 99
Advanced by Treasurer	\$4,478,330 53 4,000 01	\$793,586 48	\$3,683,744 06
	\$4,482,330 54		

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General	\$13,903,504 24	\$3,801,140 01	\$10,102,364 23
Special	4,482,330 54	798,586 48	3,683,744 06
	\$18,385,834 78	\$4,599,726 49	\$13,786,108 29

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1874.

TOTAL APPROPRIATIONS AND EXPENDITURES FOR EACH.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the August draft.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (loans)	\$610,000 00	\$236,096 26	\$373,903 74
Atlantic Avenue (loans)	1,600,000 00	1,503,505 82	96,494 18
Bennett Grammar School-house, Brighton (appro'n)	28,500 00	24,395 18	4,104 82
Broadway Extension (loans)	1,000,000 00	919,319 79	80,680 21
Burnt District (loans)	6,671,176 65	5,479,644 00	1,191,532 65
Canton Street Grading (loan)	118,000 00	116,774 80	1,225 20
Columbus Avenue Extension (loans)	515,000 00	493,148 64	21,851 36
Devonshire Street Extension (loans)	610,000 00	553,044 02	56,955 98
Eastern Avenue and Bridge (loan)	200,000 00	7,290 67	192,709 33
Engine and Hook & Ladder House, Ward 5 (loans)	65,000 00	64,811 71	188 29
Engine House, Mason Street (transfer)	15,000 00	70,981 84	4,018 16
Fort Hill Improvement (loans)	1,575,000 00	1,552,014 79	22,985 21
Grammar School-house, Dudley District (loan and appropriation)	140,000 00	133,104 21	6,895 79
Grammar School-house, Ward 15 (loan and appro'n)	130,000 00	106,714 80	23,285 20
Highland Street Stable (loan and appropriation)	90,000 00	85,797 94	4,202 06
Holton Library Building, Brighton (appropriation)	29,500 00	18,654 33	10,845 67
Harrison Avenue Extension (loan)	220,000 00	174,039 53	45,960 47
Hook & Ladder House, No. 4 (transfers)	33,000 00	32,978 67	21 33
Hose House, Longwood (loan)	28,000 00	27,105 94	894 06
New Lunatic Hospital (loan and appropriation)	148,000 00	44,955 96	103,044 04
Northampton Street District (loan and transfer)	205,000 00	3,622 95	201,377 05
Oliver Street (loan and revenue)	188,862 79	358,643 92	166,781.13 ad. by Treas.
Police Station House, Ward 16 (loan and appropri'n)	45,000 00	7,303 43	37,696 57
Police Station House, West Roxbury (appropriation)	22,426 00	21,731 91	694 09
Primary School-houses, East Boston (loan and appro.)	97,200 00	95,545 37	1,654 63
Parker Hill Reservoir (loan)	161,000 00	66,633 53	94,366 47
Police Station House, South Boston (loan)	45,000 00	42,589 37	2,410 63
Suffolk Street District (loan and transfer)	2,391,248 96	2,375,102 11	16,146 85
Washington Street Extension (loan)	1,760,000 00	1,600,155 35	159,844 65
Water Street Grade Damages (transfer)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley & other Streets (loans)	180,000 00	173,189 44	6,810 56
Widening Eliot Street (loan and transfer)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Hanover Street, No. 2 (loan)	803,623 58	769,053 19	34,570 39
Widening Warren Street (loan)	115,000 00	95,093 32	19,906 68
Widening Washington and Essex Streets (loan)	250,000 00	172,527 01	77,472 99
Amount advanced by Treasurer	\$20,905,537 98 169,781 13	\$18,150,461 61	\$2,924,857 50
	\$21,075,319 11		

City Document.—No. 77.

CITY OF BOSTON.



REQUEST

FROM THE

COMMITTEE ON PUBLIC BUILDINGS

FOR

An Additional Appropriation

FOR THE

BENNETT GRAMMAR SCHOOL-HOUSE,

BRIGHTON.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Sept. 1, 1874.

The Committee on Public Buildings beg leave to represent, that an additional appropriation is required to complete and furnish the Bennett Grammar School-house, Brighton.

They regret the necessity of coming to the government thus early in the financial year for an additional appropriation, as they supposed from the information received from the town authorities and those having charge of the building that the sum of eighteen thousand dollars would be sufficient to complete the work; hence that amount was appropriated in May last.

Following is a statement of expenditures on the building by the Town of Brighton and the City of Boston to date:—

EXPENDED BY THE TOWN OF BRIGHTON.

Paid for land and examination of title	\$12,925 00
“ labor	1,551 50
“ sand and cement	841 75
“ building foundation	1,355 44
“ stone and brick	7,529 03
“ architect	1,500 00
“ carpentry	4,900 00
“ masonry	6,400 00
“ building wall	810 75
“ labor and stock	100 75
“ surveyor	134 50
<i>Carried forward</i>	<u>\$38,048 72</u>

Brought forward \$38,048 72

EXPENDED BY THE CITY OF BOSTON.

Paid for carpentry	\$9,500 00	
“ masonry	10,600 00	
“ heating apparatus	4,500 00	
“ brick	1,495 30	
“ advertising	30 38	
“ grading grounds	269 50	
		\$26,395 18
		\$64,443 90

STATEMENT OF APPROPRIATION.

Appropriation by the Town of Brighton . . .	\$50,000 00	
Expenditures by the Town . . .	\$38,048 72	
Transferred and used for other purposes	1,451 28	
Balance to the City of Boston . . .	10,500 00	
		50,000 00
Balance from Brighton	\$10,500 00	
Appropriated by the City Council	18,000 00	
		\$28,500 00
Expenditures by the city	\$26,395 18	
Balance	2,014 82	
		28,500 00

The estimated amount required on account of said building is as follows :—

Mason's contract (balance)	\$4,995 00
Carpenter's contract (balance)	9,000 00
Heating apparatus	785 00
Brick	102 00

Furniture	4,300 00
Bank wall in front	450 00
Additional grading	350 00
Architect's fees (balance)	2,000 00
Outbuildings, etc. (contracted for)	6,262 00
Extras and contingencies	1,500 00
	\$29,744 00
Less balance of appropriation	2,104 82
To be provided for	\$27,639 18

The Committee would, therefore, respectfully request an additional appropriation of twenty-seven thousand seven hundred dollars.

For the Committee,

HIRAM EMERY,

Chairman.

City Document. — No. 78.

CITY OF BOSTON.



LAYING OUT AND EXTENSION
OF
EAST LENOX STREET,
TO
HARRISON AVENUE.

1874.

CITY OF BOSTON.

IN BOARD OF STREET COMMISSIONERS, Sept. 7th, 1874.

Resolved, That the safety and convenience of the inhabitants of the city require that East Lenox street should be laid out and extended to Harrison avenue; and for that purpose it is necessary to take and lay out, as a public street or way of the said city, a parcel of land belonging to the CITY OF BOSTON AND OTHERS, bounded as follows, viz.: Northwestwardly by Washington street, there measuring forty feet; northeastwardly by the northeasterly line of East Lenox street, one hundred ninety-six and $\frac{5.0}{100}$ feet; southeastwardly by land hereinafter described as taken from Bridget Kelley, by land taken from C. Rochell, and by land taken from J. Lavery, on two lines, twenty-nine and $\frac{5.0}{100}$, and eleven and $\frac{2.0}{100}$ feet, respectively; and southwestwardly by the present southwesterly line of East Lenox street, one hundred ninety-nine and $\frac{3.3}{100}$ feet, containing seven thousand eight hundred and ninety-six square feet, more or less.

A parcel of land belonging to the METROPOLITAN RAILROAD COMPANY, bounded as follows, viz.: Northeastwardly by the present southwesterly line of East Lenox street, there measuring five and $\frac{8.0}{100}$ feet; southeastwardly by land hereinafter described as taken from J. Lavery, $\frac{6.1}{100}$ of a foot; and southwestwardly by the southwesterly line of the proposed extension of East Lenox street, five and $\frac{1.2}{100}$ feet, containing three square feet, more or less.

A parcel of land belonging to BRIDGET KELLEY, bounded as

follows, viz.: Northwestwardly by the present line of East Lenox street, there measuring eight and $\frac{54}{100}$ feet; northeastwardly by the northeasterly line of the proposed extension of East Lenox street, sixty-six and $\frac{42}{100}$ feet; southeastwardly by land hereinafter described as taken from John T. Manson, eight and $\frac{46}{100}$ feet; and southwestwardly by land hereinafter described as taken from Ezekiel S. Johnson, and by land taken from C. Rochell, sixty-five and $\frac{17}{100}$ feet, containing five hundred and fifty-seven square feet, more or less.

A parcel of land belonging to C. ROCHELL, bounded as follows, viz.: Northwestwardly by the present line of East Lenox street, on two lines, there measuring one and $\frac{78}{100}$ and twenty and $\frac{51}{100}$ feet respectively; northeastwardly by land before described as taken from Bridget Kelley, sixty-three and $\frac{13}{100}$ feet; southeastwardly by land hereinafter described as taken from Ezekiel S. Johnson, twenty-two feet; and southwestwardly by land hereinafter described as taken from J. Lavery, fifty-nine and $\frac{78}{100}$ feet, containing thirteen hundred and fifty-four square feet, more or less.

A parcel of land belonging to J. LAVERY, bounded as follows, viz.: Southwestwardly by the southwesterly line of the proposed extension of East Lenox street, there measuring fifty-seven and $\frac{7}{100}$ feet; northwestwardly by land before described as taken from the Metropolitan Railroad Company, and by the present line of East Lenox street, nine and $\frac{92}{100}$ feet; northeastwardly by land before described as taken from C. Rochell, fifty-nine and $\frac{78}{100}$ feet; southeastwardly by land hereinafter described as taken from Ezekiel S. Johnson, nine and $\frac{54}{100}$ feet; containing five hundred and fifty-seven square feet, more or less.

A parcel of land belonging to JOHN T. MANSON, bounded as follows, viz.: Northwestwardly by land before described as taken from Bridget Kelley, there measuring eight and $\frac{46}{100}$ feet; northeastwardly by the northeasterly line of the

proposed extension of East Lenox street, one hundred fifty-seven and $\frac{93}{100}$ feet; southeastwardly by Reed street, eight and $\frac{46}{100}$ feet; and southwestwardly by land hereinafter described as taken from Ezekiel S. Johnson, one hundred and fifty-eight feet; containing thirteen hundred and thirty-six square feet, more or less.

A parcel of land belonging to EZEKIEL S. JOHNSON, bounded as follows, viz.: Northwestwardly by land before described as taken from J. Lavery, and by land taken from C. Rochell, there measuring thirty-one and $\frac{54}{100}$ feet; northeastwardly by land before described as taken from Bridget Kelley, and by land taken from John T. Manson, one hundred sixty and $\frac{4}{100}$ feet; southeastwardly by Reed street thirty-one and $\frac{54}{100}$ feet; and southwestwardly by the southwesterly line of the proposed extension of East Lenox street, one hundred sixty and $\frac{27}{100}$ feet; containing five thousand and fifty-one square feet, more or less.

A parcel of land belonging to the CITY OF BOSTON AND OTHERS, bounded as follows, viz.: Northwestwardly by Reed street, there measuring forty and $\frac{2}{100}$ feet; northeastwardly by the northeasterly line of the proposed extension of East Lenox street, one hundred seventy-eight and $\frac{74}{100}$ feet; southeastwardly by Harrison avenue, forty and $\frac{2}{100}$ feet; and southwestwardly by the southwesterly line of the said proposed extension of East Lenox street, one hundred seventy-eight and $\frac{63}{100}$ feet; containing seven thousand one hundred and forty-seven square feet, more or less.

AND WHEREAS, due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, IT IS THEREFORE ORDERED, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, according to a plan of the said laying-out and extension, made by T. W. Davis, City Surveyor, dated March 27, 1874, and deposited in his

office. And this Board doth adjudge that the expense of laying out and extending the said East Lenox street, as aforesaid, will amount to thirty thousand three hundred eighteen and $\frac{95}{100}$ dollars.

EXTENSION OF EAST LENOX STREET.

7

Estimate of Damages Occasioned by Laying out, and Extension of East Lenox Street.

ESTATES.	Description.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before laying out and widening.	Value of buildings after laying out and widening.	Value of old material to be cut off.	Damages to buildings, owners, and occupants.	Total amount of damages to each estate.	Remarks.
Owners Unknown . . .		7,896								
Metropolitan R. R. Co.		3	\$2 00	\$6 00					\$6 00	
Bridget Kelley . . .		229	2 00	458 00	\$2,200 00	\$600 00		\$1,800 00	2,258 00	
Bridget Kelley . . .	Passageway.	328	75	246 00					246 00	
C. Rochell		1,040	2 00	2,080 00	2,200 00			2,200 00	4,280 00	
C. Rochell	Passageway.	314	75	235 50					235 50	
J. Lavery		557	2 00	1,114 00	2,000 00			2,000 00	3,114 00	
John T. Manson . . .		546	1 35	737 10	4,500 00	1,200 00		3,500 00	4,237 10	
John T. Manson . . .	Passageway.	790	35	276 50					276 50	
Ezekiel S. Johnson . .		4,225	1 35	5,738 85	2,500 00			2,500 00	8,238 85	
Ezekiel S. Johnson . .	Passageway.	800	35	280 00					280 00	
City of Boston		7,147	1 00	7,147 00					7,147 00	
		23,901		\$18,318 95	\$13,400 00	\$1,800 00		\$12,000 00	\$30,318 95	

City Document. — *No. 79.*

CITY OF BOSTON.



AUDITOR'S MONTHLY EXHIBIT.

SEPTEMBER 3, 1874.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS
FOR 1874-75.

MONTHLY EXHIBIT.

OFFICE OF THE AUDITOR OF ACCOUNTS, }
CITY HALL, Sept. 3, 1874. }

TO THE HONORABLE CITY COUNCIL:

GENTLEMEN, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1874-75, as shown in the books in his office, September 1,st 1874, including the September draft, being five months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,

Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Addition to City Hospital . . .	\$190,000 00		\$190,000 00
Advertising	6,000 00	\$1,348 27	4,651 73
Annuities	512 00	170 00	342 00
Armories	25,000 00	8,245 56	16,754 44
Assessors' Department	104,729 00	66,535 19	38,193 81
Bells and Clocks	6,475 00	1,137 20	5,337 80
Bennett Grammar School-house, } Brighton }	120,530 50	19,425 68	1,104 82
Board of Health	102,100 00	24,888 00	77,212 00
Boston Harbor	10,000 00	2,182 98	7,817 02
Bridges	52,000 00	17,524 56	34,475 44
Brighton Fire Alarm extension . .	6,460 00	3,363 65	3,096 35
Cedar Grove Cemetery }	4,218 40	11,069 74	\$675.48 provided for.
Add Revenue rec'd, \$6,175.86 }			
Charles River and Warren Bridges .	45,102 00	3,029 05	42,072 95
Chestnut Hill Driveway	18,500 00	7,371 22	11,128 78
City Hospital	120,000 00	47,957 33	72,042 67
City Registrar's Department . . .	12,400 00	3,892 76	8,507 24
Common, etc.	115,700 00	61,310 23	54,389 77
Contingent Funds, viz. :			
Joint Com'ttees of the City Council	4,000 00	1,351 15	2,648 85
Mayor	1,500 00	109 00	1,391 00
Board of Aldermen	1,500 00	1,260 30	239 70
Common Council	3,000 00	1,627 12	1,372 88
County of Suffolk	350,000 00	124,093 55	225,906 45
East Boston Ferries	270,000 00	115,363 55	154,636 45
Elevator, City Hall	12,000 00	1,422 60	10,577 40
Engineer's Department	30,881 00	10,594 03	20,286 97
Engine House and Land, Dover St.	45,000 00	20,000 00	25,000 00
Engine House and Land, Parker St.	40,000 00	11,157 50	28,842 50
Engine House and Land, Fulton St.	45,000 00		45,000 00
Evergreen Cemetery }	738 00	597 90	636 10
Add Revenue received, \$496 }			
Fire Department	695,742 00	299,216 43	396,525 57
Fire Alarm Telegraph	43,215 00	10,757 32	32,457 68
Grammar School-house, Dudley } District }	449,930 99	48,283 92	1,647 07
Grammar School-house, Everett } District, Ward 16 }	20,000 00		20,000 00
Grammar School-house, Ward 15, } Building }	41,865 20	34,701 07	7,164 13
Additional Land	5,000 00	5,000 00	
Carried forward	\$2,499,099 09	\$964,986 86	\$1,541,459 57

¹ Brought from last year, \$2,530 50
² Balance of revenue from last year, 1,218 40
³ Balance of revenue from last year, 133 00

⁴ Brought from last year, \$19,930 99
⁵ Brought from last year, 21,865 20

AUDITOR'S MONTHLY EXHIBIT.

5

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
<i>Brought forward</i>	\$2,499,099 09	\$964,986 86	\$1,541,459 57
Grammar School-house, Washington Village:			
Building	120,000 00		120,000 00
Land	35,000 00		35,000 00
Grammar School-house, Winthrop District, Charlestown:			
Building	75,000 00		75,000 00
Land	50,000 00		50,000 00
Health Department	446,607 00	174,489 88	272,117 12
Highland street Stable	120,673 82	16,471 76	4,202 06
Holton Library Building, Brighton	18,096 50	14,267 55	3,828 95
Incidental Expenses			
Add Income Trust Funds, \$546.80 }	87,000 00	39,984 97	47,561 83
Inspection of Buildings	22,000 00	8,986 73	13,013 27
Interest and Premium	2,055,000 00	511,107 08	1,543,892 92
Lamps	455,500 00	156,616 70	298,883 30
Markets	11,195 00	3,995 17	7,199 83
Mount Hope Cemetery			
Add Revenue rec'd, \$7,363.72 }	26,311 74	20,722 83	12,952 63
Mystic Water Works			
Add Revenue rec'd, \$69,181.00 }		75,944 45	\$8,763.45 prov'd for.
New Engine House, Brighton	3,000 00	2,516 06	483 94
Overseers of the Poor	101,825 00	27,390 53	74,434 47
Old Claims	1,500 00	305 10	1,194 90
Paving, etc.	1,300,000 00	517,353 79	782,646 21
Police	865,000 00	336,529 87	528,470 13
Police Station-house, Ward 16	43,983 63	19,917 06	24,066 57
Police Station-house, West Roxbury	14,310 50	14,238 24	72 26
Primary School-house, City Point	15,000 00		15,000 00
Primary School-house, Cottage Place, Roxbury:			
Building	50,000 00		50,000 00
Land	26,000 00		26,000 00
Primary School-houses, East Boston	18,539 56	16,884 93	1,654 63
Primary School-house, Gibson District:			
Building	15,000 00		15,000 00
Land	6,000 00	6,000 00	
Primary School-house, Lawrence District:			
Building	50,000 00		50,000 00
Land	25,000 00		25,000 00
Primary School-house, Quincy St.	50,000 00	40 26	49,959 74
Printing and Stationery	38,000 00	15,486 35	22,513 65
Public Baths	40,000 00	19,124 33	20,875 67
<i>Carried forward</i>	\$3,584,641 84	\$2,963,360 50	\$5,712,483 65

¹ Brought from last year, \$15,673 82² Brought from last year, 3,096 50³ Bal. of revenue brought from last year, 2,811 74

Transferred from the Reserved Fund, 6,000 00

⁴ Brought from last year,⁵ Brought from last year,⁶ Brought from last year,

Transferred from the Reserved Fund,

\$38,983 63

9,310 50

1,339 56

5,200 00

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. unexpended.
<i>Brought forward</i>	\$8,584,641 84	\$2,963,360 50	\$5,712,483 65
Public Buildings	107,000 00	49,890 31	57,109 69
Public Institutions, viz.:			
House of Industry	210,000 00	91,269 91	118,730 09
House of Correction	110,000 00	48,314 06	61,685 94
Lunatic Hospital	65,000 00	25,555 17	39,444 83
Pauper Expenses	60,000 00	17,729 56	42,270 44
Steamboat "Henry Morrison" .	20,000 00	11,320 31	8,679 69
Office Expenses	9,000 00	3,316 13	5,683 87
New Laundry Building, Deer Island	15,000 00	4,513 70	10,486 30
Public Lands	6,000 00	3,280 18	2,719 82
Public Library	135,000 00	51,925 16	83,074 84
Public Library Building Improvem't	30,000 00	9,048 76	20,951 24
Quarantine Department . .	20,000 00	5,429 47	14,570 53
Registration of Voters and Election } Expenses }	20,000 00	2,255 70	17,744 30
Reserved Fund	284,900 00		284,900 00
Roxbury High School-house . .	30,000 00	9,359 25	20,640 75
Salaries	104,900 00	42,063 97	62,836 03
Schools and School-houses, viz.:			
School Instructors	1,256,600 00	499,513 00	757,087 00
School expenses, School Committee	119,400 00	64,346 75	55,053 25
Salaries officers, School Committee	35,400 00	14,460 00	20,940 00
School-houses, Public Buildings	332,000 00	156,680 26	175,319 74
Sealers of Weights and Measures .	7,400 00	2,673 70	4,726 30
Sewers	300,000 00	81,649 70	218,350 30
Sheds, Health Department . .	10,000 00		10,000 00
Sinking Fund Commissioners . .	2,800 00	675 00	2,125 00
Surveyor's Department	59,000 00	23,593 98	35,406 02
Water Works	787,500 00	351,392 67	436,107 33
Water Works, Interest and Premium	711,000 00	64,005 00	646,995 00
West Boston and Cragie's Bridges	2109,809 04	40,268 97	69,540 07
Widening Streets	300,000 00	64,775 12	235,224 88
Total Appropriations, \$13,645,143 00		\$4,702,666 29	\$9,230,886 90
Balances from 1873-4, 197,207 88		Less provided for	7,438 93
Add Revenue,	\$13,842,350 88		
	83,763 38		\$9,223,447 97
	\$13,926,114 26		

¹ \$3,900 00 transf'd from Res'd Fund to Salaries. ² Brought from last year, \$80,309 04.
5,200 00 " " Primary School-houses, East Boston.
6,000 00 " " Mount Hope Cemetery.

SPECIAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans) . .	\$432,315 59	\$74,561 91	\$357,753 68
Atlantic Avenue (loans)	131,494 18	35,000 00	96,494 18
Beach Street (loans)	251,000 00	251,000 00	251,000 00
Broadway Bridge Foundations (loan)	110,295 00	1,237 21	109,057 79
Broadway Extension (loans)	80,680 21	80,680 21	80,680 21
Burnt District (loans)	1,641,647 88	533,119 03	1,108,528 85
Canton Street Grading (loan)	1,225 20	1,225 20	1,225 20
Columbus Avenue Extension (loan)	21,931 80	175 74	21,756 06
Devonshire Street Extension (loans)	92,163 57	35,207 59	56,955 98
Eastern Avenue and Bridge (loan)	193,122 00	967 17	192,154 83
Engine and Hook and Ladder House, Ward 5 (loans)	17,951 34	17,942 44	8 90
Engine House, Mason Street (transfer)	5,537 55	1,519 39	4,018 16
Fort Hill Improvement (loans)	80,477 35	64,862 90	15,614 45
Harrison Avenue Extension (loan)	45,960 47	45,960 47	45,960 47
Home for Poor, Deer Island (transfer)	150,000 00	150,000 00	150,000 00
Hook and Ladder House No. 4, (reserved fund) . . .	5,557 31	5,535 98	21 33
Hose House, Longwood (loan)	15,421 75	14,656 19	765 56
Memorial Monument, Boston Common (transfer) . .	75,000 00	75,000 00	75,000 00
New Lunatic Hospital (loan and appropriation) . .	103,044 04	103,044 04	103,044 04
Northampton Street District (loan and transfer) . .	202,573 67	2,620 15	199,953 52
Oliver Street (revenue)	1,748 74	5,748 75	\$4,000.01 adv'd by Treasurer.
Parker Hill Reservoir (loan)	123,309 22	41,019 54	87,289 68
Police Station House, South Boston (loan)	9,128 22	6,717 59	2,410 63
Primary School House, Newbury Street (loan) . . .	40,000 00	40,000 00	40,000 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	10,000 00	10,000 00
Small-pox Hospital (loan)	35,987 96	6,744 32	29,243 64
Soldiers' Relief	149,280 36	29,622 86	119,657 50
Suffolk Street District (loans and transfer)	16,819 11	672 26	16,146 85
Ticknor Bequest (transfer)	2,060 51	2,060 51	2,060 51
Washington Street Extension (loan)	179,103 77	39,510 20	139,593 57
Water Street Grade Damages (transfer)	15,546 17	15,546 17	15,546 17
Water Works, Wards 13 to 16, and Extension to Wards 17 and 19 (loan)	60,000 00	21,865 73	38,134 27
Widening and Grading Dudley and other Streets (loan)	7,035 56	225 00	6,810 56
Widening Eliot Street (loan and transfer)	13,458 99	13,458 99	13,458 99
Widening Federal Street (loans)	1,103 03	1,103 03	1,103 03
Widening Hanover Street, No. 2 (loans)	34,570 39	34,570 39	34,570 39
Widening Warren Street (loan)	39,206 60	20,261 57	19,045 03
Widening Washington and Essex Streets (loan) . . .	77,472 99	77,472 99	77,472 99
Advanced by Treasurer	\$4,478,330 53 4,000 01	\$959,793 52	\$3,522,537 02
	\$4,482,330 54		

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General	\$13,926,114 26	\$4,702,666 29	\$9,223,447 97
Special	4,482,330 54	959,793 52	3,522,537 02
	\$18,408,444 80	\$5,662,459 81	\$12,745,984 99

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1874.

TOTAL APPROPRIATIONS AND EXPENDITURES FOR EACH.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the September draft.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (loans)	\$610,000 00	\$252,246 32	\$357,753 68
Atlantic Avenue (loans)	1,600,000 00	1,503,505 82	96,494 18
Bennett Grammar School-house, Brighton (appro'n)	28,500 00	27,395 18	1,104 82
Broadway Extension (loans)	1,000,000 00	919,319 79	80,680 21
Burnt District (loans)	6,671,176 65	5,562,647 80	1,108,528 85
Canton Street Grading (loan)	118,000 00	116,774 80	1,225 20
Columbus Avenue Extension (loans)	515,000 00	493,243 94	21,756 06
Devonshire Street Extension (loans)	610,000 00	553,044 02	56,955 98
Eastern Avenue and Bridge (loan)	200,000 00	7,845 17	192,154 83
Engine and Hook & Ladder House, Ward 5 (loans)	65,000 00	64,391 10	608 90
Engine House, Mason Street (transfer)	15,000 00	10,981 84	4,018 16
Fort Hill Improvement (loans)	1,575,000 00	1,559,385 55	15,614 45
Grammar School-house, Dudley District (loan and appropriation)	140,000 00	138,352 93	1,647 07
Grammar School-house, Ward 15 (loan and appro'n)	130,000 00	122,835 87	7,164 13
Highland Street Stable (loan and appropriation)	90,000 00	85,797 94	4,202 06
Holton Library Building, Brighton (appropriation)	29,500 00	25,671 05	3,828 95
Harrison Avenue Extension (loan)	220,000 00	174,039 53	45,960 47
Hook & Ladder House, No. 4 (transfers)	33,000 00	32,978 67	21 33
House House, Longwood (loan)	28,000 00	27,234 44	765 56
New Lunatic Hospital (loan and appropriation)	148,000 00	44,955 96	103,044 04
Northampton Street District (loan and transfer)	205,000 00	5,046 48	199,953 52
Oliver Street (loan and revenue)	188,862 79	358,643 92	106,781.13 ad. by Treas.
Police Station House, Ward 16 (loan and appropriation)	45,000 00	20,933 43	24,066 57
Police Station House, West Roxbury (appropriation)	22,426 60	22,353 74	72 86
Primary School-houses, East Boston (loan and appro.)	97,200 00	95,545 37	1,654 63
Parker Hill Reservoir (loan)	161,000 00	73,710 32	87,289 68
Police Station House, South Boston (loan)	45,000 00	42,589 37	2,410 63
Suffolk Street District (loan and transfer)	2,391,248 96	2,375,102 11	16,146 85
Washington Street Extension (loan)	1,760,000 00	1,620,406 43	139,593 57
Water Street Grade Damages (transfer)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley & other Streets (loans)	150,000 00	173,189 44	6,810 56
Widening Eliot Street (loan and transfer)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Hanover Street, No. 2 (loan)	803,623 58	769,053 19	34,570 39
Widening Warren Street (loan)	115,000 00	95,954 97	19,045 03
Widening Washington and Essex Streets (loan)	250,000 00	172,527 01	77,472 99
Amount advanced by Treasurer	\$20,905,537 98 169,781 13	\$18,333,195 31	\$2,742,123 80
	\$21,075,319 11		

City Document.—No. 80.

CITY OF BOSTON.



REPORT
OF THE
Cochituate Water Board
ON
WASTE OF WATER.

1874.

CITY OF BOSTON.

IN COMMON COUNCIL, Sept., 1874.

Referred to the Committee on Ordinances, and ordered to be printed.

Sent up for concurrence.

E. O. SHEPARD, *President*.

IN BOARD OF ALDERMEN, Sept. 21, 1874.

Concurred.

JOHN T. CLARK, *Chairman*.

CITY OF BOSTON.

COCHITUATE WATER BOARD OFFICE,

Sept. 17th, 1874.

TO THE CITY COUNCIL : —

In reply to your order of June 25th, 1874, relating to the waste of water, after a thorough investigation and consultation with the Water Registrar, we can see no way, with the present powers of the Board, by which any considerable amount of waste can be stopped. We believe, if the powers of the Water Board were extended so that they could in a measure control the fixtures, and discriminate in the rates for the various uses, that a great saving could be made. We do not believe it will be possible, with the present powers of the Board, to keep up a supply of water during an ordinary dry season. Although the present is an extraordinary wet season, the lake is some four feet below high-water mark, and falling at the rate of one inch every day.

Appended to this is the Water Registrar's report, which gives his views on the subject.

EDWARD P. WILBUR, *President pro tem.*

CITY OF BOSTON.

OFFICE OF THE WATER REGISTRAR, CITY HALL,
BOSTON, July 29th, 1874.

THOMAS GOGIN, *Esq.*, *Chairman of the Committee on Water Registrar's Department*: —

DEAR SIR, — In response to the following order passed by the City Council June 25th, 1874, and referred to the Water Registrar, — namely, that the Cochituate Water Board be requested to communicate to the City Council what action on the part of the City Council is desirable, to enable the Cochituate Water Board to prevent the waste of water, — I would respectfully report, that the fullest response which this department has been able to make to the above order of the City Council, June 25th, 1874, will be found with ample detail and illustration in two recent reports which I have had the honor to submit, and which are in print; the first, under date January 7th, 1874, and the last, under date May 30, 1874. In the last a condensed statement of the means to prevent waste by the water authorities of Liverpool, England, was presented, together with the highly satisfactory results attained, and these were mainly due to the increased and almost full control which, by act of Parliament, had been given the respective Water Boards of England to meet effectually the entire sources of waste or water-supply. Respectfully referring the Water Board to the above-named documents, and coming at once to the response demanded by the order to the question, namely, what action on the part of the City Council is desirable, to enable the Cochituate Water Board

to prevent the waste of water, the Registrar would most respectfully submit that, in his opinion, no measures for the prevention of waste, which stop short of placing the entire control of all water-fixtures now in use, or hereafter to be used, for Cochituate water, in the hands of the Water Board, can be relied upon. It is not his province to speak upon what may be deemed, under all circumstances, the legal relation between the city and its water-takers; but if some further control over the water-fixtures could be granted to the proper department, the permanent safety and reliability of our water-supply would be greatly increased. Inspection is desirable, and must be always kept up; but the real remedy for the immediate waste of water lays back of even the possibility of the most thorough inspection. The great cause of waste is not only chargeable to the indifference of water-consumers to the subject, but to a bad system of water-fixtures, originally put in with no regard to economy of water, but to economy of cost, and arranged for the very purpose of waste, in order to make a flush of water accomplish what a proper drain should, or by a constant flow night and day to prevent freezing; neither inspection nor fines can meet these cases. The experience abroad is overwhelmingly in accord with this view; and, after trial of all means faithfully, it has come at last that ample power at the beginning must be granted and used in order to make any impression worth considering upon the waste of water. If, in the judgment of the City Council, the following measures can be legally established, I have no hesitation in saying that a quantity of water now wasted, equal to one quarter if not one third of the present supply, will be saved in the course of time, and thereby prevent the constant threatening aspect of a short supply of water. In accordance with the views above expressed, I would respectfully suggest that the Water Board recommend to the City Council the following proposed revision of the ordinance on the subject of water rates:

First. To inaugurate a plumber's license system. Second. The absolute approval by the Water Board of all water-fixtures hereafter to be put in. Third. A prohibitory rate for all objectionable styles of water-closets, hoppers, etc., etc. — say ten dollars each. Fourth. Urinals from three to six dollars each. Bath-tubs from three to five dollars. Fifth. A commensurate rate for hand hose from five to fifty dollars.

Respectfully submitted.

WM. F. DAVIS,
Water Registrar.

ANNUAL REPORT
OF THE
SCHOOL COMMITTEE
OF THE
CITY OF BOSTON.

1873.



BOSTON:
PRESS OF ROCKWELL & CHURCHILL,
122 WASHINGTON STREET.
1874.

CITY OF BOSTON.

ROOMS OF THE SCHOOL COMMITTEE,
BOSTON, Dec. 10, 1873.

At a meeting of the School Committee, held Nov. 11th, 1873, Messrs. Adams, of Ward 16, Reynolds, Seaverns, Fitzgerald, Curtis, Slade, Rankin, Allen, of Ward 1, and Tucker, were appointed to prepare the Annual Report of the School Committee.

Mr. Adams declined serving upon the committee, and Mr. Williard was appointed in his stead.

Attest :

BARNARD CAPEN,
Secretary of the School Committee.

REPORT.



The committee charged with the duty of preparing and presenting the annual report of the schools of Boston for the school year 1872-3, do not, in view of the fulness of the details furnished by the special reports of the Superintendent, and of the several High School Committees, propose to do more than give a brief review of the work of the year, and call attention to some of the most prominent topics of interest suggested thereby.

GENERAL STATISTICS.

The year ending August 31st, 1873, shows an aggregate total of 40,017 children attending the Public Schools, against 38,688 for the year previous; an increase of 3.3 per cent., and due solely to the ordinary growth of the city, independent of annexations of territory. A decrease of attendance from 92.4 per cent. in the year preceding to 90.9 per cent. in this was owing almost entirely to the epidemics prevailing in the winter of 1872-3, and other temporarily disturbing causes, and indicates no defect in discipline.

To meet this increase of pupils the corps of instructors has been increased from 1,001 in the previ-

ous year to 1,050 in this; and yet the average number of pupils to a teacher is 41.3, or nearly 3 higher than in the former year.

The salaries paid to teachers amounted to \$929,852.41 against \$863,658.51 of the previous year, an increase chiefly from the raising of the salaries of female teachers in the Primary and Grammar schools \$100.00. But although the average rate paid is large, yet it was felt by the Board that it was really called for to command the best grade of teachers, in the departments named; and that a wise economy required the salaries to be first put on a proper basis, and then for the Board to insist on corresponding qualifications in the teachers.

Two new Grammar school-houses have been erected; one named the Gaston, after our late honored presiding officer, and situated near City Point, South Boston. This contains fourteen rooms and a hall, and is, with the exception of the Girls' High School-house on Newton street, perhaps, the best adapted building for school purposes in the city. The other is the new Mather School-house in the Sixteenth Ward, and contains ten rooms and a hall.

A large increase will be noticed in the total expenditures for school purposes, which reach the amount of \$1,746,403; that for the year preceding being but \$1,314,380.33. Out of this large disbursement, not less than \$454,230.34 was for school-houses and lands, being \$356,429.66 more than was paid in the previous year; and was paid out under the direction of the Common Council, the School Committee having no control in the matter whatever. We mention this

partly because the School Committee are often held responsible for all that appears under the head of School Expenditures, but mainly to show the importance of the question considered hereinafter in reference to the control of this whole matter of construction.

This large expense — a higher figure than has been reached in any previous school year, with but one exception — has resulted in part from the erection of the school-houses already mentioned; but in a considerable degree also from the purchase of the lot of land intended for the English High and Latin Schools, situated on Warren avenue, and referred to in our last Annual Report. Large, however, as the sum paid was, we can confidently say that it was well expended, not only in view of the necessities for school accommodation which it supplied, but even in the mere light of an investment by the city. It has, however, been fully justified by the former consideration; and it may safely be predicted that these two schools will enter upon a new and enlarged career of usefulness when established in this central position.

There has also been added one new Primary school-house, and others are in process of erection, but not before their need was pressing felt. It is to be regretted that in the construction of school buildings in our city more attention has not been paid to the possible enlargements which the growth of the school may require; and a system of colonization has often been necessarily adopted, in buildings quite unsuited to the requirements of a school, and not unfrequently placed

in a situation by no means convenient to the other departments of the same district.

THE GIRLS' HIGH SCHOOL.

Since the separation from this of the Normal department, and we may well add, since the accession of the present head-master, the school has made a decided advance in the proficiency of the pupils in the several grades, and in all the branches of study prescribed. The separation of the two departments was accomplished none too soon for the good of either; but this was especially true in regard to

THE NORMAL SCHOOL.

Without imputing intentional fault to any one concerned in the charge of the Girls' High and Normal School before the separation, it may be emphatically said that the connection of the two departments was gradually becoming fatal to the Normal element. It was a result natural enough, that the number of girls desiring to be qualified as teachers should rapidly diminish, in view of the greater attractions held out by the High School course, pursued under the same roof. It was also a necessary result, that in an educated community like ours the number of those entering for the High School course proper should be greater than that seeking Normal training; and this, with the former cause, was gradually but surely crowding the Normal department out of the school. A Normal School should, moreover, be connected not

with a High, but with a Grammar or Primary department; that the pupils should have the frequent opportunity of handling classes, in accompaniment with the theoretical instruction of the Training School. All this the school failed to have in any proper degree.

We can but regret, moreover, the untoward accidents to which it has been exposed. While suffering gravely from the want of suitable accommodations, and the demoralization necessarily incident to occupying temporary and insufficient quarters, its legal right to exist at all was doubted, and in an opinion transmitted to the Mayor, by the law officer of the city, the right of the city to maintain such a school, under existing laws, was denied; and it was held that a special act of the Legislature was needed to give the requisite authority. The organization of the school has, nevertheless, been maintained to this time, as there was no doubt that the necessary enactment could be obtained; since, whatever the legal aspect of the matter might be, there was never any question of the utility and necessity of the school; and before this report is in print we may safely hope to see this institution restored to its ancient efficiency.

CONSTRUCTION OF SCHOOL-HOUSES.

The whole matter of the construction of school-houses is practically under the exclusive control of the Common Council of the city. It is true that as early as Dec. 18, 1855, it was provided by that body that "No school-house should be located, erected, or

materially altered, until the School Committee shall have been consulted on the proposed locality and plans ;" but it was added, "except by order of the City Council ;" and the exception and not the ordinance has prevailed ever since. That in the original distribution of powers or functions between the several branches of the city government it was wise to assign this duty to a department not charged with the care of the schools, and which could not officially or in the regular course of its duties have any practical knowledge of the wants of the scholars, we think no one will venture to assert. We hope that in the revision of the city charter, now in progress, this may be in some way corrected.

Two ways at least seem to be open to do this: one is that the whole matter should be left to this Board; and that we should be empowered to decide exclusively upon location, construction, alteration and repairs, and, in short, all details involved therein. But there are many who do not wish so sweeping a change, and think that it would involve this Board in duties foreign, in some degree, to its proper sphere of action. To them it seems more advisable that the spirit of the ordinance of 1855, without the exception above referred to, should be incorporated into the City Charter, and this Board be vested with a concurrent advisory power on the points already mentioned. Such, indeed, was the conclusion of the very able committee appointed by this Board in 1871, and stated by them in a report presented March 21st of that year. They there say: "It has been thought by some that the whole business of locating, erecting

and taking care of school edifices, should be in the hands of this Board. But your committee, upon a careful review of the whole subject, are not prepared to adopt this view. They are disposed to think it best that the buildings should be erected as they now are, by the City Council. But it is clear that the School Board should have a voice in determining the location and the plans of the school buildings, and the extent and character of the school accommodations. This power is necessary to the economical and successful administration of the school system." And they add: "What is needed is that the City Charter should be amended so as to secure to this Board the powers here indicated, leaving to the City Council the duty of purchasing sites and erecting and caring for buildings. It would seem that this modest demand should meet with no opposition."

Whichever plan may be adopted, the one thing to be kept steadily in view is, to have some person or persons who shall at once be professionally competent to decide on the needs of the schools in point of construction, and responsible for seeing that those needs are properly supplied. It would be difficult to devise a system less calculated in theory or in practice to produce beneficial results than the one now prevailing, where the whole question of construction, with all the important details of light, heat, ventilation, proper hygienic conditions, etc., is determined conclusively by a body generally unacquainted with the wants to be met, and whose responsibility ends when the edifice is completed. In those costly structures for which our citizens cheerfully pay, a

mere conventional mode of construction is too often followed ; and this is not to be wondered at under a system which seems perversely contrived at once to produce unintelligent construction and total absence of responsibility therefor.

HYGIENE, VENTILATION, ETC.

We have dwelt the more on the subject just considered, because of its intimate connection with the health of the pupils. So long as the school-house is not constructed with all the improvements known, in regard to ventilation, proper light, size and construction of rooms in reference to these points and to sound; height of the structure to avoid undue fatigue from climbing too many stairs; and proper space to prevent crowding, etc., we are implanting the seeds of disease in the children whom we profess to educate. The true view of education includes the training of the body as well as of the mind, and in the language of our esteemed Superintendent, should require us, "not merely to avoid injury to the health of the pupils while carrying on their instruction in the schools, but to increase their physical health, strength and beauty."

And first, in regard to ventilation it may truly be said that there is not a single public school in the city where a substantially complete system of ventilation exists. To remove the foul air, neither by the sudden introduction of cold currents, nor by the simultaneous removal of all the warm air intended for the comfort and health of the occupants of the room, is a

problem satisfactorily encountered, so far as we know, in only one school-room in this city, and that is in a private school-house constructed with this specially in view. In a careful and exhaustive paper communicated to the Massachusetts State Board of Health by a prominent physician of this State, and printed in their report for 1874, the writer says with emphasis: "Pure air is a necessity to health. No State or town can afford to allow its school children to be slowly poisoned by breathing foul air." . . . "If we are wise we shall be less lavish of expenditure on showy exteriors and lofty halls, and more ready to spend on thorough ventilation. Nay, we shall insist on the latter at whatever price. In every school-house which cost \$20,000, enough might have been saved by making the ceilings two feet lower to pay the cost of supplying the building with pure air."

Our space will not permit us to pursue this important topic more in detail ; but we will refer for its further illustration and discussion to the report just quoted from, and also to the report of the same Board for the year 1871.

Again, in regard to the matter of the admission of light, it is a fact that not until the present year, and then almost by accident, has the strict rule never departed from in the construction of European school-houses, been observed, namely: to have the light enter always at the left hand, and on the side parallel to the greater length of the room.

We refer to these details not in any spirit of fault-finding, but as further enforcing the necessity, above insisted on, of a competent and responsible person or

Board to see to the due observance of points so intimately connected with the pupil's health and capacity to study.

EXERCISE.

Last, but not least in this connection, is the subject of gymnastics. That much is done in this direction is true. Teachers and School Boards are in a general way aware of the vital necessity of exercise as an alterative, during school hours. But this is administered, when given at all, without intelligent system, and under the direction of teachers who are not themselves skilled in gymnastic exercise, or even in the rules of physical growth and development. Upon this point, the language of the medical expert before referred to is very pertinent. In the report already quoted from, he says, "There is a great tendency to irregularity in the practice of these exercises, and not unfrequently they fall into disuse. Theoretically, their great importance is admitted, while practically the time necessary for them is grudged as so much taken from the time of study. The fact is that spirited and suitable light gymnastics promote, instead of hindering study, because they relieve tension, draw off nervous irritability, equalize circulation, deepen respiration, and return children to their books renewed in mind as well as in body, and capable of attention and application which were impossible to them five minutes before."

Is it, then, too much to claim that physical training should, within due limits, be a part of the scheme of education, and proper provision made that it should

be systematically inculcated, like any other branch? The writer just referred to proceeds to say: "But these exercises should be a *regular* part of every session in *all* schools, and in the younger schools should occur oftener than once in each half day." "To bring about" [the due] "result in any school it is evident that we need the influence and *example* of teachers who not only believe in, but *practice* and *enjoy*, physical exercises in doors and out."

And this is the footing on which we hope to see this matter placed. Not exercise merely to relieve constraint, or to prevent bodily injury from confinement to study, but administered as a distinct branch of education by teachers themselves competently trained to direct it.

ORGANIZATION OF THE BOARD.

The necessity of a change in the size of the Board must have become apparent to all. It has more than once been the subject of comment in our annual reports ; and in the report of the special committee of this Board already referred to, made in March, 1871, it was said that "the Board as now constituted, especially by the union of other municipalities with Boston, is too numerous for the transaction of the business which comes before it in the most careful, prompt and judicious manner. In this particular our Board presents a marked anomaly among the school-boards of the country. No other city in the country, however large, has a school-board half as numerous as ours. . . . And your committee therefore

recommend an amendment to the city charter so as to provide for the election of three members from each ward, instead of six, as now provided for." What was true in 1871 is, with the present and prospective additions to the city, doubly true at this time.

Such a reduction is a prime necessity. To what extent it shall be carried, and whether the number from each ward shall be reduced to three, or even to two members is a matter of detail merely, which may safely be left to future consideration.

A change more radical in its character, by which besides the reduction in number proposed, the members of this Board shall be elected from the city at large, and not from each ward separately, has been suggested, and has recommended itself to many, for whose opinion we entertain great respect. It would undoubtedly meet and correct certain incidental evils in our organization which have been seriously felt. It is at the same time open to the criticism that it may take away from our Board the element of local representation, which in theory we ought to possess; and which is found in the City Council, as distinguished from the Board of Aldermen; we mean that knowledge of the wants and characteristics of each district, which only one himself from the district can directly supply. But this is a matter which we do not now feel called upon to do more than present.

EXAMINATIONS AND ASSISTANT SUPERINTENDENTS.

In the annual school report for the last year the great need of uniform and thorough examination

of our schools was strongly set forth. In the year that has passed the urgency of this need has not diminished, but largely increased. The natural growth of our schools and the large accessions to the territory of the city, made or to be made, render it our imperative duty to provide at an early moment for this want. That it cannot be met by the present system, or, we should rather say, want of system, must be obvious to the most superficial observer. Even if the various district committees, composed, as they are, of business men, could give regular and systematic examinations to the schools specially assigned to them, it is certainly beyond their power for each of them to harmonize its work with that of all the others, or for the General Board to control and bring into one efficient whole the varying results of so many separate and unequally working sub-committees.

It certainly needs no argument to convince reflecting men, that to produce a practically effective system, the power and responsibility should rest in as few hands as possible; and it is evident that the only person who stands in the proper position to take this charge is the Superintendent of the Schools. It is equally evident that with the multifarious duties which this gentleman is already charged with, he can only do this efficiently, by and through assistants; and it seems that such a number of assistant superintendents should be appointed as the thorough performance of the work might call for. The power to make such appointments is fully conferred on this Board by § 55 of the City Charter.

We believe no measure would be more powerful

than this in bringing our schools up to the high stand they have held in former years, and none, indeed, more imperatively required to keep them abreast with other educational institutions at home and abroad.

We again refer for special information as to the details of the schools in general, and of the work of the several High and special schools during the past school year, to the full reports of the Superintendent and sub-committees which accompany this report.

JOSEPH WILLARD, *Chairman*,
WILLARD S. ALLEN,
HALL CURTIS,
JOHN P. REYNOLDS,
JOHN E. FITZGERALD,
JOSEPH A. TUCKER,
LUCIUS SLADE,
JOEL SEAVERNS,
EDWARD B. RANKIN.

REPORTS
OF THE
COMMITTEES ON THE HIGH SCHOOLS,
FOR THE
School Year Ending August 31, 1873.

LATIN SCHOOL.

The committee on the Latin School respectfully submit the following report: —

The average attendance the past year has been a little short of two hundred scholars. The first class, at the close of the year 1873, numbered 23. Diplomas were presented to Alexander T. Bowser, J. Q. A. Brett, Newell R. Campbell, James L. Cheney, Charles G. Currier, Hayward W. Cushing, Frederick W. Cutler, Walter M. Cutler, Edward J. Cutter, Arthur B. Denny, Howard C. Dunham, Edward F. Fulton, Preston H. Grover, Henry B. Hudson, Edward L. Morse, Matthew V. Pierce, Quincy Pierce, Frank W. Rollins, Walter H. Russell, Thomas F. Sherman, James W. Walker, Reginald H. Young. Of these, 18 entered Harvard University, 1 Boston University, 1 Rochester University, and 2 engaged in business.

Till ten years ago a liberal education, as that term was understood, in New England, was completed by those who had fair opportunities for undertaking it, at about twenty years of age. The first half of this education was gained under school discipline, in classes within school walls. The college, with its course from sixteen to twenty, formed virtually an upper school, organized in departments under special professors, without school discipline.

At present boys under eighteen years are not willingly received at Cambridge. With the farther growth of the University plan, the desirable age must, in the immediate future, be one year more advanced. To show the effect of this new order of things, the requisitions in Latin at the time of admission, and the required Latin of the university course, may well be used. The study of Latin is not required after the first college year. Not only must the candidate read a longer list of Latin authors before entrance, but he is expected to translate at sight, a writer which he has not before seen, provided the style present no unusual difficulty. It would be a misrepresentation not to add that the later years of the college course afford ample opportunities for the study of advanced Latin to all who choose it; and that some of the changes in the requisitions are due to the desire to offer to the student alternative courses of study. But the fact remains, that a large number of those who are rightfully counted among the liberally educated must, in every country, close their general training, and give to their studies a professional, or special direction, after the age of twenty; while, on the other hand, ability to read fair Latin, at first sight, implies all the knowledge of that language that many intelligent parents elect to give to their sons.

The first difficulty under which the Latin School, and all similar schools whose aim is high and honorable, find themselves is, therefore, apparent. The high school of to day is forced, whether it will or no, to become what the college of the last generation

was. Its head master should possess the highest qualifications as an educator. Its studies, greatly advanced and diversified, can at least, in the later years, no longer, all of them, be attempted by each of its teachers. Its boys have grown to be men in understanding, and almost in age. This change, reluctantly accepted by many observers, creates exactly that plan of education which, under the guidance of the wisest scholars, has grown to be the established system of all other countries.

The altered condition of the school brings it face to face with another obstacle. In the busy life of our community few men study earnestly the various branches of learning which the school must now teach. He who would impart well, even elementary knowledge, must have learned far more than his scholars are fitted to acquire. Of the few who thus study, only here and there one possesses that rarest of gifts, — the power to teach a training school; for instructors of this grade are among us as yet wholly unknown. With us, such a teacher, instead of undergoing, as he ought, and as in other countries he must, a rigid public examination as to his attainments, and a two years' probation as to his fitness, may be inducted into office after an almost informal examination; and after a trial of a few weeks find himself "confirmed."

Nor is this all. Appointed without sufficient guaranties, teachers, whom flattery itself could not call more than indifferent, are only nominally subject to annual re-election. Flagrant misconduct might indeed cause their removal, but in default of this

they may hold their places for life. Nothing can be clearer than that no great school can prosper unless it can ensure itself subordinate teachers of unquestioned ability. To this end one of two things is indispensable. Either the guaranties already described must at the time of appointment be rigidly exacted, or, in default of this, there must lie somewhere the right to discharge a dull, or incompetent man, if for no other reason than the hope of obtaining a better.

The number of boys who desire thorough elementary instruction as a preparation for intellectual culture was probably never larger than it is to-day. The children of this city who ought to fill the Latin School throng private schools of this class at home, and are sent in numbers to distant cities and towns. With these boys within our walls, many difficulties which now exist, and retard the prosperity of the school, would disappear. No high school, worthy of the name, can exist, without liberal and yearly augmenting outlays, beyond entirely the cost of schools which teach only the rudiments of learning. When the number of boys attending such a school greatly diminishes, the expense of sustaining it grows insupportable and, in the view of many, unreasonable.

The increased age, prescribed four years ago for admission to the school, has very much lessened the number of applicants. Whenever, during the past forty years, the age of admission has been lowered, the number of boys entering the school has been at once enlarged; and, at the same time, the list of

those who complete its course has remained as great as before. Boys who are intended for a university career are, in general, made to turn their studies in this direction much earlier than at twelve years. Received when younger in the various private schools, they there form attachments, and in practice are seldom transferred from these schools to ours.

The committee have thus reported in the belief that the interest which the whole city has in the maintenance and development of this its chief school can hardly be overstated. The Latin School cannot continue a valuable part of our system, without large-hearted and generous provision for its teachers, equipment, and buildings. But to make this expenditure welcome, the community everywhere must feel and express an interest, strong and hearty, in upholding and extending it.

HENRY S. WASHBURN, *Chairman.*

CATALOGUE OF THE TEACHERS AND PUPILS OF THE LATIN SCHOOL, SEPTEMBER, 1873.

HEAD-MASTER.

FRANCIS GARDNER.

MASTERS.

AUGUSTINE M. GAY,
MOSES MERRILL,
JOSIAH G. DEARBORN,
GEORGE W. MINNS,

CHARLES J. CAPEN,
JOSEPH W. CHADWICK,
ERNEST YOUNG,
ARTHUR I. FISKE,

JOHN L. STODDARD.

INSTRUCTOR IN FRENCH.

PROSPÈRE MORAND.

INSTRUCTOR IN DRAWING.

HENRY HITCHINGS.

INSTRUCTOR IN MUSIC.

JULIUS EICHBERG.

INSTRUCTOR IN MILITARY DRILL.

LIEUT.-COL. HOBART MOORE.

PUPILS.

FIRST CLASS.

Allen, Willis Boyd
Brady, Edward
Dorr, Benjamin Humphrey
Dunham, Harrison
Eaton, Harold Bayard
Gay, Frederick Lewis
Grant, Patrick
Hunt, Edward Browne

Jacques, Herbert
Kelley, Webster
Litchfield, William Harvey
Lodge, Richard Walley
McMichael, Willis Brooks
Meinrath, Joseph
Miller, Charles Edward
Mills, Isaac Barney
Mitchell, John Singleton
Murray, Theodore Randolph

Nickerson, Frederic Obed
 Nickerson, Herbert Goodridge
 O'Dowd, John
 Power, David Ewin
 Ross, George Whiting
 Russell, Thomas
 Sanders, Orren Burnham
 Simmons, Thornton Howard
 Stackpole, Edward
 Stimpson, Theodore Fiske
 Tappan, Herbert
 Tower, David Bates
 Vinton, Charles Henry
 Wheeler, Henry

SECOND CLASS.

Andrews, Clement Walker
 Bowen, John Templeton
 Brett, Lloyd Milton
 Chandler, Frederick Emerson
 Churchill, John M. Brewer
 Coolidge, William Williamson
 Delano, Samuel
 Dillenback, Hiram Irving
 Fenno, Lawrence Carteret
 Gunther, Ludolph Wilhelm
 Hanson, William Greene
 Hastings, Edward Rogers
 Hayden, Edward Everett
 Hayes, Arthur Clarence
 Hayes, Charles Edmund
 Kinney, Henry Nason
 Lincoln, Charles Sprague
 Merrill, George White
 Miller, George Stow
 Mitchell, James William
 Morris, John Gavin
 Newton, Edward Wood
 Nunn, Charles Pierce
 Patten, Frank Bartlett
 Perry, Frederick Gardiner
 Robinson, Edward
 Robinson, Edward Abbot
 Sargent, Henry Rufus
 Shannon, Edward Weston

Somerby, Samuel Ellsworth
 Tebbetts, John Sever
 Trull, Larkin
 West, William Badger

FOURTH CLASS.

Division A.

Alger, Philip Rounseville
 Bailey, Louis Andrew
 Edwards, Pierrepont
 Field, James Brainerd
 Fraser, Donald Allan
 Hawes, Edward Southworth
 Headley, Phineas Camp
 Hodges, Harry Foot
 Hunt, Herbert Lincoln
 Lane, Charles Stoddard
 Mansfield, Lott
 Means, Charles Johnson
 Millerick, Daniel Edward
 Phinney, George Alcott
 Roche, Patrick Joseph
 Savage, John Henry
 Sears, George Gray
 Smith, Walter Allen
 Strong, George Alexander
 Van Benthuyzen, George
 Warren, Franklin Cooley
 Wells, Charles Luke
 White, Charles Addison
 Wilde, George Cobb

Division B.

Barstow, Henry Taylor
 Bates, Frank Prosper
 Bates, Lewis Palmer
 Buckley, Philip Townsend
 Butterworth, Frank Albert
 Clark, Louis Monroe
 Frost, Edwin Thomas
 Frost, Charles Ballou
 George, Alvin
 Holden, Francis Marion
 Holden, Frederic Blake

Milliken, Arthur Norris
 Morse, Jacob Charles
 Morse, Warren
 Mullen, Frank
 Norman, William Mellow
 Reynolds, John
 Ruffin, Herbert St. Pierre
 Shea, John Joseph
 Smith, Hamilton Sutton
 Somes, William Wyman
 Stevens, William Stanford
 Thayer, Henry James
 Tilton, Joseph Brown
 Warren, Charles Everett
 Yenetchi, Henry Ainsworth

FIFTH CLASS.

Division A.

Abbe, Alan Joseph
 Baker, Ezra Henry
 Bicknell, William H. Warren
 Cheney, David Batchelder
 Clark, Benjamin Preston
 Cornish, Lester Warren
 Cutler, Charles Francis
 Devine, James Luke
 Dunton, Charles Hamlin
 Halligan, John Joseph Francis
 Krauss, Alonzo Augustus
 Loring, Victor Joseph
 Manning, Berwick
 McLaughlin, Frederic Rodney
 Merritt, Nehemiah Thomas
 Reynolds, Edward
 Sawyer, Jacob James Augustus
 Williams, William Cowles

Division B.

Bartley, George Edgar
 Codman, Charles Greenough
 Croke, Reuben Francis
 Hastings, Nathaniel
 Hoffendahl, George Gordon

Loring, Prescott
 Martin, Frank
 McDonald, Martin Alan Paul
 McLaughlin, John Peter
 Morong, Walter West
 Murphy, Daniel John
 Poor, James Ridgway
 Richardson, Frank Chase
 Smith, Frederick Richards
 Smith, Fred. Swan
 Williams, Frank Delano

SIXTH CLASS.

Division A.

Bachelder, Thomas Cogswell
 Bates, Benjamin Frederick
 Beeching, George Washington
 Bowen, James Williams
 Briggs, Frank Joseph
 Cameron, Charles James John
 Carter, George Washington
 Chesley, George William
 Collison, Harvey Newton
 Cunningham, Harry Winchester
 Ferris, Frederick Barker
 Flynn, John Joseph
 Foster, Burnside
 Fraser, Charles Alexander
 Howe, George Francis
 Knapp, Samuel Stetson
 Lane, Alfred Church
 Linscott, Roswell
 McInnes, James
 Murphy, Alfred Humphrey
 Prince, Frederick Henry
 Reed, Charles Harry
 Russell, Arthur Hastings
 Sanford, Joseph Briggs
 Shea, Daniel Joseph
 Taylor, Henry Willard
 Thayer, William Eldridge
 Tonks, Alfred

Division B.

Brewer, Daniel Chauncey
Deasey, William Henry
Denton, Frederick Lincoln
Dickson, William James
Glover, William Lincoln
Hamilton, Charles Wesley
Hinds, Howard
Kelliher, Michael John

Mixter, Henry Clay
Moseley, Charles Bailey
Murray, Michael Joseph
Page, William Hussey
Pattee, William Sullivan
Povah, Robert Samuel
Schmitt, Karl
Sprague, Wooster Henry
Whitney, William Lincoln

ENGLISH HIGH SCHOOL.

ENGLISH HIGH SCHOOL.

The annual report of the English High School is submitted by the undersigned, in the absence of the Chairman, Rev. S. K. Lothrop, D. D., who found his arduous and devoted duties to his parish and the public schools compelled him to seek rest and recuperation in a foreign land.

We hope that he will soon return, with improved health, and be able to resume his many duties with that vigor and energy which he has always evinced during the many years of his public life.

The school has sustained its usual high standing during the year, with a very good average attendance.

The average whole number for the last half of the year exceeds that of the corresponding half of the preceding year by 47 pupils. The average whole number was 538, against 491 for the corresponding half of the preceding year; the average daily attendance, 520; and the per cent. of attendance, 96 1-2.

These pupils have been taught by one head-master, five masters, twelve sub-masters, and five special teachers; namely, two for Drawing, and one each for Music, Military Drill, and French Language.

At the examination of candidates, in July, for admission to the English High School, 277 were admitted, and 226 entered the school at the commencement in September, 1873.

The average of falling off from the school was about 10 per cent. during the year.

The graduating class for 1873 acquitted themselves on examination in a very creditable manner, exhibiting a good knowledge of the studies they had pursued — with honor to themselves, and highly creditable to the teachers under whom they had been taught.

Four of the teachers, one master, and three sub-masters leave the service of the city at the close of the present school year, leaving four vacancies to be filled at the opening of the school in September. All of the other teachers have been re-elected for the coming school year.

Respectfully submitted,

IRA ALLEN, *Chairman pro tem.*

CATALOGUE OF THE TEACHERS AND PUPILS OF
THE ENGLISH HIGH SCHOOL, SEPTEMBER, 1873.

HEAD-MASTER.

CHARLES M. CUMSTON.

MASTERS.

LUTHER W. ANDERSON,	ROBERT E. BABSON,
L. HALL GRANDGENT,	ALBERT HALE,
JOHN P. BROWN.	

SUB-MASTERS.

CHARLES B. TRAVIS,	JOHN F. CASEY,
CHARLES J. LINCOLN,	CHARLES O. WHITMAN,
CHARLES H. CUMSTON,	GEORGE F. LEONARD,
JOHN O. NORRIS,	M. SEAVEY,
LUCIUS H. BUCKINGHAM,	JEROME B. POOLE,
THOMAS J. EMERY,	WILLIAM G. NOWELL.

TEACHER OF FRENCH.

NICHOLAS F. DRACOPOLIS.

TEACHERS OF DRAWING.

HENRY HITCHINGS, EDWARD K. CLARK, J. B. HAMBLY.

TEACHER OF MILITARY DRILL.

LIEUT.-COL. HOBART MOORE.

PUPILS.

ADVANCED CLASS.

Babcock, John B., Jr.
Baker, Charles M.
Barron, Clarence W.
Brewer, Frank C.
Carter, Clarence H.
Cobb, Albert W.
Gourley, John, Jr.
Greene, Frank E.
Milton, Albert G.
Porter, John A.
Prentiss, Frederic H.
Richardson, Charles E.
Robinson, Burt A.
Simonds, Frank P.
Spicer, Vibe C.
Tufts, Harry P.
Upham, Harry T.

FIRST CLASS.

Adams, Henry
Allen, George E.
Bachelder, Frank A.
Bailey, Parker N.
Bellamy, John
Bennett, Everett T.
Blodgett, Charles W.
Blodgett, William A.
Boynton, George W.
Brown, Alfred W.
Brown, Charles G.
Brown, William F.
Burke, Richard, Jr.
Chandler, Oscar
Chase, William P.
Coleman, John B.
Conant, George B.
Converse, Henry T.
Cosgrave, William T.
Cotton, Albert E.
Cowin, Nelson F.
Crosbie, Robert F.
Crosby, Edward H.
Croston, William H.

Damon, Herbert
Donald, David P.
Duran, John H.
Dykes, Alfred, Jr.
Ellis, Edward J.
Emmons, James N.
Fabyan, John
Farnsworth, Edward M.
Farren, Thomas G.
Fillebrowne, Clarence R.
Foley, Peter A.
Foltz, Herbert
Frame, John F.
Frost, James P.
Frye, Frank H.
Fuller, George S. T.
Gallivan, Timothy A.
Galvin, John E.
Gay, Eben H.
Geary, James R.
Glover, Nathan H.
Goodwin, George A.
Guild, Chester, Jr.
Guintzburg, Henry A.
Haley, Robert J.
Ham, William J.
Harrigan, Timothy F.
Hartshorn, Eugene F.
Hawthorne, Robert S.
Hayes, James B.
Hennessy, John L.
Heyer, Frank A.
Hill, Walter B.
Hobbs, Fred. W.
Johnson, Charles S.
Johnson, Henry A.
Kelliher, John D.
Kingman, Abner, Jr.
Kingsbury, Edward R.
Knowles, Arthur J.
Lapham, William R.
Leavitt, William S.
Lincoln, Leon G.
Lunt, Albert F.
McCarthy, Thomas J.

Means, Arthur F.
Miller, Frank L.
Morrison, Philip
Morse, William F.
Munsell, Albert H.
Murphy, Louis A.
Murphy, William J.
Neilson, William A.
Nickerson, Archibald S.
Palmer, William D.
Patten, Arthur C.
Paul, Charles F.
Phelps, William S., Jr.
Phillips, Thomas F.
Pickering, William H.
Pierce, Arthur J.
Pierce, George A.
Pope, Benjamin, Jr.
Porter, Harry G.
Porter, John I.
Powell, Frank G.
Power, Walter A.
Prendergast, Daniel L.
Ripley, Fred W.
Roundy, Franklin F.
Russell, Duncan
Sanders, Joseph W.
Seaverns, Alexander H.
Seavey, Millard C.
Shepard, Horace B.
Shepard, John, Jr.
Shoninger, Henry
Skillings, Julius P.
Snelling, Washington, Jr.
Spitz, Abraham P.
Stanwood, Eben C.
Stone, Mark
Tarbox, Charles R.
Towle, Charles F.
Wainwright, Charles D.
Walbridge, Percy E.
Walker, Guy C.
Wallingford, Ernest E.
Watkins, Walter K.
Whidden, Bradlee
Whidden, Eugene L.
Whitney, Henry A.

Whitten, Charles N.
Wigley, William A.
Wiley, Jesse S.
Williams, Edward E.
Wolff, Julius
Zerrahn, Frank E.

SECOND CLASS.

Achorn, Kendall L.
Adams, George
Alger, William E.
Allen, Francis S.
Allen, Henry S.
Anderson, James J.
Arnold, Allen
Austin, Walter
Babcock, Henry E.
Bachelder, John W.
Baldwin, Frank F.
Bartlett, Alfred H.
Bond, Luther A.
Bouv  , James A.
Bowen, Benjamin J.
Boyd, James
Brackett, Arthur L.
Bradford, Frank W.
Brooks, Charles E.
Brooks, William A.
Brown, George E.
Brownell, Henry G.
Burgess, Clinton B.
Burgess, Howard K.
Burley, William P.
Burr, Charles H.
Butler, Edward J.
Casey, Thomas W.
Cherrington, William C.
Child, John H.
Clark, Nathan D.
Clifford, Chandler R.
Cochran, John F.
Coffey, Jeremiah
Conness, John
Crooker, Charles B.
Crosby, Samuel T.
Crowell, Charles S.
Cummings, Ciro

Cunningham, Charles E.
 Currier, Edward T.
 Cutler, Edward A.
 Cutler, Henry A.
 Damrell, Charles
 Davenport, Howard S.
 Davenport, William E.
 Davis, William G.
 Davis, William S.
 Denham, Matthew T.
 Dooling, James J.
 Doolittle, Frank L.
 Duffley, Thomas F.
 Dunbar, Thomas L.
 Dyer, Frank W.
 Earle, William A.
 Edwards, William P.
 Elsbree, Frank M.
 Farless, James H.
 Farrar, Fred. A.
 Farwell, Henry L.
 Fisher, Willis T.
 Fisk, Frank C.
 Fitzgibbon, Frank J.
 Frazier, George H.
 Frederick, Frank S.
 Garrett, Andrew F.
 Geary, Daniel J.
 Gibbons, Joseph M.
 Gottlob, Jacob
 Greenberg, Alie
 Griffen, James J.
 Grovenor, Edmund R.
 Halden, Harry
 Hall, Henry G.
 Haskell, Waldo C.
 Heyer, Chas. F. A.
 Heyer, Louis E.
 Hitchcock, Hiram A.
 Hoey, Thomas W. C.
 Holmes, Ernest
 Hopkins, William A.
 Houghton, Michael J.
 Hyams, Godfrey M.
 Hyde, William A.
 Irving, William N.

Jarvis, William F.
 Joy, Frank L.
 Keeler, Edward F.
 Kellogg, Frank G.
 Kiernan, Charles J.
 Kingman, George F.
 Kyle, Flavill W.
 Lally, William A.
 Lamb, John B.
 Lane, Fred. H.
 Lane, Thomas J.
 Leonard, Henry R.
 Loring, Fred. R.
 Lotts, Henry B.
 Loveland, Herbert W.
 Lynch, Samuel B.
 Macdonald, Harry N.
 Mackie, Frank
 Maclean, Kenneth A.
 Magurin, Gilbert L.
 Mason, George B.
 McAloon, Augustus H.
 McCarthy, Michael J.
 McCobb, Frank W.
 McInerney, James E.
 McGlinchey, Fred. W.
 McLaughlin, Fred. H.
 Mehegan, Timothy
 Meinrath, Ariel
 Miller, Edwin C.
 Moore, John J.
 Morrison, Willard C.
 Morse, Charles F.
 Morse, Edward W.
 Morss, Charles A., Jr.
 Mungovan, John F.
 Murphy, Thomas J.
 Murray, George F. H.
 Myerson, Louis A.
 Nickerson, George
 North, Wayne H.
 O'Neil, John F.
 Parker, Frank H.
 Parker, John G.
 Parmelee, George L.
 Parr, Charles S.

Perry, Joseph M.
Phelps, Charles H.
Pierce, William A.
Pigeon, Charles W.
Pomeroy, William H.
Pond, George W.
Porter, Frank A.
Pratt, Samuel F.
Quimby, Charles L.
Quinn, Philip H.
Randall, Frank C.
Reed, Alfred H.
Renfrew, Charles P.
Rich, Isaac
Rich, William A.
Richardson, John
Rockwood, Edward O.
Rollins, William S.
Russell, John H. M.
Ryder, Charles C.
Sampson, George H.
Schlimper, Henry
Scollard, Cornelius J.
Shepard, David P.
Slattery, Thomas F.
Small, Herbert E.
Smith, George A.
Smith, William S. D.
Souther, John F.
Spaulding, Albert D.
Spear, Alfred
Standish, James M.
Stanwood, Fred S.
Staples, Walter J.
Stetson, Edwin E.
Strauss, Louis
Sullivan, Henry A.
Swallow, William H.
Taylor, Frank F.
Taylor, Fred P.
Tenney, Henry W.
Treadwell, William P.
Trombley, James F.
Union, Frank L.
Utley, Charles H.
Waitt, Arthur M.

Walters, Arthur A.
Wardwell, George J.
Ware, Bruce R.
Warshauer, Henry
Webber, Charles H.
Welch, William J.
Weston, Arthur H.
Whidden, Renton
Whiting, William S.
Whitney, Frank C.
Wilbor, Albert G., Jr.]
Wilde, Edward C.
Wilder, Charles W., Jr.
Wilkie, James
Withington, James C.
Woodman, George F.
Wright, Merle, St. Croix
Wyman, James T.

THIRD CLASS.

Abbott, Frank E.
Adams, Arthur A.
Albree, John, Jr.
Allen, Frank N.
Anderson, Patrick
Armstrong, Lewis W.
Badger, Erastus F.
Badger, Walter I.
Bailey, Charles H.
Baldwin, Fred. F.
Barron, George A.
Barry, David A.
Barry, John F.
Barton, William R.
Beckman, Joshua
Berry, Alfred L.
Bickford, Horace M.
Bird, William H.
Blair, Howard K.
Blodgett, Rollin N.
Bond, James A.
Bowker, Waldo B.
Bradlee, Benj. H.
Bremant, Edward J.
Brown, Charles H.

Brown, Peter J.
Bunnell, Louie E.
Burnham, Reuben A.
Burnett, William J.
Burton, Hiram M.
Cahalan, John J.
Callahan, John J.
Callanan, Richard T.
Capen, George A.
Chandler, Henry G.
Chaplin, Frank J.
Chester, George W.
Christian, Albert A.
Clapp, Frank H.
Clark, William J.
Cliffe, Adams J.
Coffee, John J. A.
Coffey, John H.
Collamore, Peter
Collins, David A.
Connor, Frank X.
Conway, Patrick H.
Coombs, Albert D.
Crane, Horatio N.
Crocker, Clarence H.
Crowley, John W. J.
Cumston, William
Curtis, Thomas R.
Cutler, Henry H.
Dakin, Charles L.
Daley, John A.
Davidson, James W.
Davis, Charles J.
Davis, Frank L.
Devine, Thomas M.
Dismore, Wesley F.
Dodd, Edward P.
Doggett, Samuel B.
Doolittle, Joseph
Doolittle, Warren H.
Douglas, John T., Jr.
Ellis, William B.
Falardo, Charles H.
Fallen, Matthew W.
Fenton, Benjamin F.
Fields, Charles R.

Fish, Charles S.
Fitzgerald, Herbert
Flynn, Edward J.
Fogarty, James E.
Ford, Frank H.
Foster, George R.
French, Asa P.
Fynes, James A.
Gallagher, Joseph E.
Garland, George C.
Garrett, George A.
Garrett, William A.
Gartland, Peter F.
Gay, Harry H.
Gerrish, Thomas D., Jr.
Getchell, Fred.
Gifford, George L.
Gilmore, Horace E.
Green, Edward H.
Griffin, Frank D.
Grimmons, Charles A.
Grodjinski, Abram
Guiteau, Charles C.
Hackett, Jean A.
Haley, Daniel J.
Hall, Frank A.
Hall, Harry S.
Hall, Richard S.
Hall, Samuel R.
Halm, Edwin M.
Hardy, Charles W., Jr.
Hatch, George M.
Hayes, George G.
Heath, William B.
Hemenway, Frank B.
Henchey, Rufus J.
Hendrie, Robert W.
Hennessey, Thomas J.
Heustis, James W.
Hobbs, Joseph M.
Hodge, Leslie O.
Hodgkins, Moses R.
Horgan, Daniel E.
Howland, Charles A.
Hoyt, Arthur W.
Hunneman, Joseph B.

James, Arthur H.
Jenkins, Herbert L.
Jones, James E.
Kaufman, Myer
Kendall, Fred. P.
Kenney, David M.
Keys, John W.
Kingman, Rufus A.
Knott, N. W. T.
Knowles, John T.
Krey, John H.
Langley, Henry W.
Lennon, Frank T.
Leonard, Francis H.
Levi, Jacob
Linehan, John J.
Linton, Thomas W.
Lombard, Willard C.
Lovejoy, Charles F.
Luce, William B.
Lynch, John
Macomber, George A.
Mayo, Lawrence
McLaughlin, John
McLauthlin, Walter S.
McSweeney, Terrence
Merrill, Thomas
Miley, Charles E.
Miller, Charles S.
Miller, William A.
Miller, William T.
Millet, Charles W.
Mills, Eben F.
Morrison, Charles N.
Murphy, Fred. F.
Murphy, Jeremiah J.
Murtagh, Edward P.
Nason, John
Neal, Jose H.
Neily, George A.
Newell, George F.
O'Brien, Thomas E.
O'Donohue, John P.
Ogilvie, John S.
Parker, George W., Jr.
Parkerson, Harry P.

Parsons, George A.
Patten, William F.
Pearson, Edward W.
Peck, Charles F., Jr.
Perkins, G. G. S.
Phelps, John W.
Pierce, Clarence E.
Pinkham, Arthur S.
Plumer, Luther B.
Pope, Hubert
Powers, William F.
Pratt, George E.
Prince, Aaron
Putnam, Fred. H.
Putnam, George N.
Quinn, John T.
Rand, William E.
Ranson, William H.
Reed, Frank N.
Reed, George F.
Reddican, Frank J.
Richardson, Oscar
Roberts, Charles W.
Robbins, Henry C.
Robinson, Chester A.
Rogers, Edwin A.
Ross, George W.
Ross, George F. J.
Rowe, Augustus H.
Rumrill, William F.
Schalossberg, Solomon
Schlegel, Orlando T.
Seavey, Rudolph G.
Shaw, Otis M.
Shea, James J.
Shea, John E.
Sheehan, Patrick
Shortell, Lawrence
Shurtleff, Howard L.
Simmons, William S.
Simmons, William T.
Smith, Erastus F.
Smith, Frank L.
Snell, Charles F.
Snow, Franklin, Jr.
Spence, Edward P.

Spitz, Jacob M.
 Starkweather, Oscar W.
 Stewart, Fred. W.
 Stratton, Jonas M.
 Stuart, Fred. J.
 Studley, John B.
 Studley, Joshua
 Sullivan, John F.
 Sweeney, Fred. R.
 Swett, Leslie M.
 Thatcher, Thomas C.
 Thain, George W.
 Thompson, Arthur H.
 Tillson, John
 Topham, George G.
 Topham, William H.
 Traiser, Charles H.
 Ufford, Walter S.
 Underwood, Frank L.
 Underwood, William L.
 Wallingford, Waldo A.
 Wardrop George W.
 Warshauer, Jacob

West, Albert S.
 White, James F.
 White, William H.
 Whitman, Fred. O.
 Whiton, Henry L.
 Whittemore, Walter B.
 Whittier, Edmond A.
 Wiener, Max
 Wiggin, Robert C.
 Williams, Albert M.
 Williams, John T.
 Willis, Frank E.
 Wise, Edward R.
 Wren, James F.
 Wyman, Charles A.

SUMMARY.

Advanced Class	17
First Class	122
Second Class	195
Third Class	247
Total	581

GIRLS' HIGH SCHOOL.

The Committee on the Girls' High School respectfully report: —

That the school is in a satisfactory condition, so far as the course of instruction and the number of pupils are concerned. It takes time, and thought, and labor, to elevate the standard of such an institution, and changes designed to increase its efficiency and usefulness must be made gradually and only after mature consideration. Something has already been done to lighten the pressure of the course of studies and requirements, which, under the old arrangement, was found to be too severe; the work which ought to have occupied four years, having been crowded into three, to the injury, in many cases, of the health of the pupils, and the sacrifice of thoroughness and completeness of instruction. These important defects will be partially corrected under the new programme.

But the great defect in the management of the school has been the practice, on the part of the committee, of admitting pupils under a suitable age. The rule of the School Board, which fixes the minimum age at fifteen years, is unquestionably wise and judicious, well calculated to maintain the standard

and efficiency of the school, and to furnish a solid basis for improvement, and the gradual elevation of the character and quality of instruction. But the weak point in the rule is, that it leaves an unlimited margin of discretion on the part of the committee to admit any pupil under the required age, and, as a matter of fact, this discretion has been exercised so freely, in former years, as to admit many even under the age of fourteen, and some as young as twelve, if they came with a diploma from the Grammar Schools. The result has been a want of maturity on the part of the pupil, and the requisite ability to grapple with the High School course of studies and to derive any advantage from them. There has been a lack of mental discipline, which a mere knowledge of certain facts, and a capacity to pass an examination in studies requiring only the exercise of memory, did not supply. Under these circumstances, the pupil admitted below the proper age must work to great and manifest disadvantage, or else the standard of studies and instruction must be lowered to meet her individual case, to the manifest injury of other pupils not so situated, and to the general character of the school. In other words, the practice of admitting pupils at too young an age has had a tendency to drag down the standard of the High School to the level of Grammar School studies, while at the same time the people have a right, upon which they are insisting more and more strongly, to expect the best instruction in the higher branches of an elementary education for girls.

It ought to be borne in mind, also, that it is not

merely the pupils themselves, admitted under the requisite age, and incapable, from this fact, of profiting by a High School course of studies, who suffer, nor the High School which admits them, but that the Grammar Schools from which they come suffer by their premature promotion. The work of those schools cannot be finished to their own credit, nor to the lasting benefit of their pupils, if the impatience of parents or children is allowed to interfere with a thorough training, of which time is an essential element. It is, therefore, for the interest of the Grammar Schools, as well as that of the High School, that the rule as to the age of admission should be more closely adhered to. Whatever tends to raise the standard of the High School will be of service to the Grammar Schools. If the former receives only well-trained pupils the latter will be sustained in training them well.

GENERAL OUTLINE OF STUDIES IN THE GIRLS' HIGH SCHOOL.

JUNIOR CLASS.

English. — Rhetoric (Haven's). Literature (English and American Authors). Composition.

Mathematics. — Algebra (Bradbury's).

Science. — Physiology (Hutchison's). Botany (Gray's).

Languages. — Latin (Harkness' Grammar and Reader); or French (Böcher's Otto's Grammar and Reader); or German (Krauss' Grammar and Schlegel's Reader).

Drawing and Music.

MIDDLE CLASS.

English. — Literature (English and American Authors). Composition.

History. — General (Anderson's).

Mathematics. — Geometry and Plane Trigonometry (Bradbury's).

Science. — Chemistry (Eliot, Storer and Nichols'). Mineralogy.

Languages. — Latin (as before, with Latin School series); or French (as before, with Corneille's Cid); or German (as before, with Schiller's Wilhelm Tell).

Drawing and Music.

SENIOR CLASS.

English. — Shakespeare. Composition.

History. — United States (Anderson and Lectures). Constitution (Alden's Science of Government).

Philosophy. — Ethics (Peabody's Moral Philosophy).

Science. — Physics (Balfour Stewart's). Astronomy (Kiddle's).

Languages. — Latin (Æneid). French (Molière, Racine). German (Goethe).

Drawing and Music.

INDUSTRIAL COURSE.

Photography.

Book-keeping (Comer's).

Phonography.

FOURTH YEAR'S CLASS.

English. — Chaucer's History and Use of Language and Literature.

History. — Ancient and Modern.

Philosophy. — Metaphysics (Porter's abridged).

Political Economy (Fawcett's).

Science. — Astronomy continued, Geology (Dana's).

Mathematics. — Spherical Trigonometry, Analytic Geometry.

Languages. — Latin, French and German, continued.

At the end of the three years' course, it is proposed to award a diploma, or certificate, to such pupils as have shown a reasonable degree of proficiency in the prescribed studies. The Fourth Year's Course is entirely voluntary.

This general outline may be stated in the form of a programme, as follows:—

COURSE OF STUDY FOR 1873-74.

CLASS	ENGLISH.	HISTORY AND PHILOSOPHY.	PHYSICS AND NATURAL SCIENCE.	MATHEMATICS.	LANGUAGES.	ÆSTHETIC.	INDUSTRIAL.
JUNIOR	Rhetoric (Haven's). Literat're (Auth'rs). Composition.		Physiology (Hutchinson's). Botany (Gray's).	Algebra (Bradbury's).	Latin (Harkness' Reader). French (Böcher's Otto's Grammar and Reader). German (Kraus' Grammar and Schlegel's Rder).	Drawing. Music.	—
MIDDLE	Literat're (Auth'rs). Composition.	General History (Anderson's).	Chemistry (Elliot, Storer & Nichols). Mineralogy.	Geometry and Plane Trigonometry (Bradbury's).	Continued. With Latin School Series: Phædrus, Justin & Nepos; Cornelle's Cid; Schiller's Wilhelm Tell.	Continued.	Photography. Book-keeping.
SENIOR	Shakespeare. Composition.	United States (Anderson's and Lectures). Constitution (Allden's Science of Government). Ethics (Peabody's).	Physics (Balfour Stewart's). Astronomy (Kiddle's).	—	Continued. With Æneid; Molière and Racine; Goethe's Egmont.	Continued.	Book-keeping. Phonography.
ADVANCED, OR FOURTH YEAR.	History of Literat're (Spalding's). Chaucer. Composition.	History, continued, Ancient or Modern. Metaphysics (Porter's Intellectual Science). Political economy (Fawcett's).	Astronomy, continued. Geology (Dana's).	Spherical Trigonometry. Analytic Geometry (Loomis').	Continued. With Horace and Cicero; Poëtes Français; Wallenstein.	Continued.	Design.

Elective Studies. — Mathematics may be exchanged for a Language in the Middle Year. The Languages are open to choice; but one is to be taken, and only one at a time, unless a second is substituted for Mathematics in the Middle Year, or added, as it may be, on half-time, as an extra study in the Senior Year. A Language chosen in the Junior or Middle Year is to be studied for two years at least. The industrial studies are elective; and if Book-keeping is taken, it must be in place of Mathematics or a Language. The advanced Course is elective; but enough of it must be taken to make a good year's work.

Only part of the school-work can be made elective to any advantage. Our scholars are too young, as a general rule, and too impatient, to be allowed to choose their studies for themselves. Their own good requires that they should pursue, in the main, studies chosen for them, especially in the earlier part of the course. The good of the school also requires it, as the utmost irregularity might ensue from introducing the elective system generally. It is therefore introduced but partially.

Its first application is to the Mathematical Course. Experience here, as elsewhere, shows that many young people are unfitted to derive any real benefit from Mathematics. Some do not even derive any apparent benefit, and of those who do, there is always a proportion, often large, to whom the benefit is only apparent. We, therefore, propose to give such scholars a chance to study a language instead of the Geometry and Trigonometry, which come in the middle year of the programme.

It is not proposed to discourage anybody who is competent from taking Mathematics, or to increase the linguistic work of the school at the expense of the mathematical. All whom we find benefited by Mathematics will be encouraged to keep up the study as long as it stands on the programme.

The languages are all placed on the same footing and thrown open to choice. One must be taken, and only one at a time. If Mathematics are dropped, another language may be taken in its place, and in the senior year a second language may be taken as an extra study, on half-time, that is, with two recitations

a week. By this arrangement it is believed that more satisfactory results can be obtained in the study of the three languages, Latin, French, and German, taught in the school. One of the three can be learned thoroughly, and two can be learned fairly in the course of the three years. The third must be left, in most cases, for the extra study of the senior year and the fuller opportunities of the fourth or advanced year.

The studies of the advanced year are all elective. Scholars are then old enough to know for themselves, or they have been with us long enough for us to know what studies suit them best, and upon these only we propose to have them enter as advanced students. We hope that the complete and comprehensive course now offered will induce many of our scholars to remain longer than has been usual hitherto, and that it will attract scholars who have passed through other schools. The higher education of woman, about which so much is said nowadays, is attainable in these advanced studies. They may be extended, if there is a demand for their extension, and a fourth year may be followed by a fifth and sixth. This would not be at the expense of the three years hitherto constituting the course; far otherwise. Those three years would be improved, and their tone would be raised by the influence of the higher studies in the years following.

The industrial studies are all elective also. Some of our scholars are to earn their daily bread, and in other ways than teaching. To such it will be a very great advantage to get some idea of the difference

between skilled and unskilled labor, and, if possible, to acquire some degree of skilled labor themselves. This is the object of the industrial studies upon our programme. They are not intended to prepare our scholars for business occupations, except in a general way; but this alone will help them to obtain much better occupations than if they went without it. Book-keeping may be more of a special object, and to give those who take it a reasonable prospect of acquiring it, we propose that it shall be taken in place of Mathematics in the middle year. It cannot be learned as an extra study.

This much of an elective element will add, it is believed, to the character and efficiency of the school.

It will be observed, from a study of the programme, that great prominence is now given to practice in English Composition, a new and thorough system having been arranged throughout the various classes, and this is regarded by the committee as of the greatest practical importance. In addition to the regular class-work in composition, an hour is devoted, every two weeks, to the reading of two or more compositions from each class before the whole school. These compositions are not prepared especially for the occasion, but selected from those written as a part of the regular class-work. The advantages of this arrangement are already perceptible, and its influence on the school is believed to be in the highest degree beneficial.

The committee would also express a high degree of satisfaction with the musical instruction in this school. The thorough method adopted, and the pro-

ficiency attained in the theory and practice of vocal music, have created already a wide-spread enthusiasm, and infused into the school new spirit and new vitality, which has been felt throughout the whole range of studies, in every department of instruction. Its general influence on the school is, therefore, in the highest degree salutary, and it ought to rank as an essential branch in intellectual culture.

Drawing has been too recently introduced to enable us to judge of the good results of instruction in it. It should be placed under the most competent supervision, especially in a school like the Girls' High, in order to take its proper rank in the programme.

Number of pupils in the regular course	.	600
“ “ “ “ advanced “ .	.	30
		630

For the Committee,

CHARLES L. FLINT,
Chairman.

CATALOGUE OF THE TEACHERS AND PUPILS OF THE GIRLS' HIGH SCHOOL, OCTOBER 1, 1873.

HEAD-MASTER.

SAMUEL ELIOT.

MASTER'S ASSISTANT.

HARRIET E. CARYL.

TEACHER OF CHEMISTRY.

BESSIE T. CAPEN.

HEAD ASSISTANTS.

MARGARET A. BADGER,
EMMA A. TEMPLE,

KATHARINE KNAPP,
MARY E. SCATES.

ASSISTANTS.

ADELINE L. SYLVESTER,
ELIZABETH C. LIGHT,
LUCY O. FESSENDEN,
JULIA A. JELLISON,
ADELINE S. TUFTS,
ALICE M. WELLINGTON,
LUCY R. WOODS,
ELLEN M. FOLSOM,
LILLE B. HOLBROOK,

EMERETTE O. PATCH,
REBECCA R. JOSLIN,
S. ANNIE SHOREY,
AUGUSTA C. KIMBALL,
ELLEN O. SWAIN,
FLORENA GRAY,
MARY J. ALLISON,
LAURA B. WHITE.

PROSPÈRE MORAND,	TEACHER	OF	FRENCH.
E. C. F. KRAUSS,	"	"	GERMAN.
JULIUS EICHBERG,	"	"	MUSIC.
CHARLES A. BARRY,	"	"	DRAWING.
MERCY A. BAILEY,	"	"	"

PUPILS.

ADVANCED CLASSES.

Fifth year.

Babcock, Ellen S.
Comer, Fannie T.
Morrill, Julia L.
Page, Eliza L.
Webb, Elizabeth

Fourth year.

Aldrich, Jessie L.
Anderson, Mary E.
Babson, Kate
Bickford, Sarah E.
Carr, Maria F. A.
Dike, Cora E.
Egerton, Carrie M.
Ellis, Clara E.
Ellison, Amanda C.
Flagg, Clara B.
Geer, Grace W.
Hines, Mabel F.
Hobart, Mary L.
Howes, Gertrude L.
Hutchins, Mary F.
Jacobs, Adelaide A.
Knox, Margaret A.
Marliave, Julia D.
Marlow, Catharine K.
McKay, Cressy
Merriam, Ida A.
Morrison, Rebecca
Noyes, Eliza W.
Perry, Leila E.
Smith, Mary B.
Smith, Lizzie L.
Steele, Helen C.
Stone, Ellen A.
Taylor, Ida F.
Waller, Mary E.
Young, Esther M.

CLASSES OF THREE YEARS' COURSE.

SENIOR CLASS.

Abbott, Ella M.
Alden, Edith F.
Allen, Georgiana
Ames, Mary Emma
Andrews, Martha L.
Ball, Frances E.
Bailey, Valetta I.
Bell, Charlotte R.
Bell, Minnie F.
Bibbey, Mary L.
Bigelow, Florence J.
Billings, Elizabeth F.
Blodgett, Minnie L.
Booth, Clara H.
Brawley, Margaret C. M.
Brooks, Emma G.
Brown, Sarah A.
Browning, Mary L.
Bruce, Helen E.
Bryant, Mary E.
Buckman, Josephine A.
Bumstead, Emma W.
Burgess, Helen
Carney, Jennie M.
Chadbourne, L. S.
Chase, B. M.
Chase, Emma E.
Cheney, Jennie A.
Clapp, Abbie F.
Cleary, Emma M.
Clifford, Anne A.
Cline, Ada F.
Collison, Alicia I.
Cooke, L. L.
Coughlin, Julia F.
Coursey, Mary E.
Courtney, Mary E.
Crooke, Flora I.
Cullen, Frances E.
Cunningham, Mary T.
Curtis, S. W.

Darling, Gertrude
Davis, Annie M.
Dennison, Henrietta V.
Dolbeare, Alice G.
Draffin, Annie E.
Dudley, Carrie M.
Ellis, Florence L.
Ellithorpe, Sarah B.
English, Rebecca F.
Evans, Julia A.
Flynn, Mary E.
Forsaith, Ella F.
Foster, Mary E.
Fuller, L. M.
Gainey, Annie F.
Gale, Emma L.
Gebhart, Effie M.
George, Katharine W.
Geyer, S. E.
Ginness, Florence E. M.
Gleason, Jennie M.
Gogin, Emma C.
Goodwin, Mary A.
Gott, Annie C.
Gray, Sarah A.
Greeley, Florence S.
Guptill, Alma J.
Hall, Eleanor A.
Harlow, C. A.
Harlow, Susan L.
Hayden, Lelia R.
Haynes, Alice F.
Hersey, Clara
Hinckley, Esther M.
Hinckley, Louie H.
Hinman, B. B.
Hitchcock, Annie C.
Holmes, Evvie T.
Hooper, Grace E.
Ide, Mary E.
Jones, Mary F.
Josselyn, Mary E.
Kendall, Jennie I.
Kieley, J. C.
Ladd, Elizabeth B.
Lanning, Ella F.

Leonard, Cora E.
Locke, Mary S.
Logan, Florence A.
Mackie, Lillie I.
Mann, Marietta R.
McAloon, A.
McBride, L.
McCleary, Emily A.
McLaughlin, Sarah J.
Mellen, Lucy J.
Morrison, Martha M.
Morse, Evelyn E.
Morse, Lucy M.
Mosely, Clara M.
Mullally, Jennie
Murtagh, Katie A. T.
Nann, Kate
Nann, Rose E.
Newell, Mary E.
Nowell, Alice P.
O'Neill, Sarah V.
Ordway, Mary L.
Overend, Sarah A.
Palmer, Alice W.
Parrott, J. K.
Patten, F. G.
Pearl, Hannah A.
Phalon, Alice C.
Pierce, Caroline E.
Pitcher, M. Ella
Plummer, F. K.
Plummer, Mary A.
Plummer, Sarah H.
Priest, Mary D.
Reuter, Augusta F.
Robbins, Sarah H.
Robinson, Elizabeth J. A.
Roraback, Ida W.
Ross, Ella A.
Sargent, Mary F.
Schafer, Mary E.
Sherman, Effie D.
Shurtleff, Hannah S.
Shute, Sophia A.
Simpson, Anna E.
Slade, Louise P.

Smith, L. H.
 Snow, J. M.
 Stevens, L. F.
 Stevenson, Harriet E.
 Stone, Julia
 Stratten, Winella W.
 Strout, Alma E.
 Stumpf, Sarah
 Sutherland, L. B. W.
 Swindlehurst, Susan L.
 Symonds, Mary E.
 Tenney, Grace G.
 Titcomb, Mary A.
 Titus, Mary E.
 Toland, Sarah E.
 Vinal, Mary J.
 Walsh, Ellen B.
 Ward, Mary
 Weston, Annie W.
 Weston, M. Emma
 Whidden, L. D.
 White, Angela L.
 White, Annie E.
 White, Marcella G.
 Whiton, Florence A.
 Wright, Martha F.

MIDDLE CLASS.

Adams, L. L.
 Adams, Sarah E.
 Alexander, Mary L.
 Allen, Pauline E.
 Allison, Harriet E.
 Andrews, Mary A.
 Atwood, Flora C.
 Atwood, Sarah E.
 Avery, Annie F.
 Babson, Abbie H.
 Badlam, Mary E.
 Bailey, Frances T.
 Bailey, Mary E.
 Baker, Mary W.
 Balch, Zoe T.
 Barnicoat, Alice A.
 Benedict, Emily

Botto, Lillian
 Bradlee, Ella F.
 Bradley, Ella
 Brigham, Georgiana N.
 Bright, Mary L.
 Brimbecom, L. H.
 Brimbecom, Mary A.
 Brown, C. L.
 Brown, Grace C.
 Brown, Lucy L.
 Bryant, Carrie H.
 Buckley, Martha G.
 Bugbee, Mary E.
 Burgess, Mary C.
 Burton, Ida M.
 Butman, Gertrude W.
 Capron, Kate C.
 Carey, N. L.
 Cayvan, Georgia E.
 Chandler, Gertrude A.
 Cheney, H. M.
 Cherrington, Claudine E.
 Clarke, Martha G.
 Cleary, Margaret
 Cline, Adela B.
 Cobb, Helen
 Cook, Henrietta J.
 Coolidge, Eleonora R.
 Coolidge, Sarah L.
 Cornish, Frances A.
 Coulter, Rebecca
 Crabtre, Annie C.
 Craig, H. G.
 Crane, Emma F.
 Crocker, M. P.
 Crosby, Lena J.
 Cundy, Alice A.
 Curry, Margaret L.
 Curtis, Eulalie L.
 Cushing, Arabella B.
 Cushing, Ethel
 Danforth, Gertrude E.
 Dexter, Florence E.
 Doe, Ellen S.
 Doherty, Mary
 Donaldson, Jeannie

Dore, Annie M.
Dow, Sarah F.
Drake, Agnes L.
Drake, Florence I.
Driscoll, Mary E.
Edmands, Roxalana P.
Edwards, Eloise S.
Eliot, Emily M.
Emmons, Florence A.
Everett, Elizabeth H.
Fairbanks, C. D.
Farren, Helena G.
Farrer, Cora D.
Farrington, Pamela B.
Fineran, Catherine J.
Flagg, Ida C.
Floyd, Emily J.
Folsom, Lilla E.
Forbush, Angeline S.
Foster, Mary G.
Frost, Sarah A.
Gebhart, F. W.
Gibson, Jeannie C.
Glass, Sarah R.
Glines, Augusta C.
Goodrich, Mary L.
Gourley, Letitia E.
Gray, L. L.
Gustin, Lillian M.
Hagan, Rosanna E.
Halliday, Ida E.
Harding, Alice J.
Hewins, Edith
Heywood, Alice E.
Heywood, Lucy B.
High, Belle A.
Hill, Jane L.
Hill, Mary E.
Hill, Sarah F.
Hilliard, C. E.
Hodges, Mary S.
Holmes, Theresa C.
Holton, Charlotte M.
Humphrey, Mary J.
Huntress, Jennie W.
Jackson, Adeline B.

Jameson, Helen M.
Jenkins, Effie M.
Johnson, Cora M.
Jones, Mary E. R.
Keenan, Marie F.
Kelliher, Elinor M.
Kenney, E. Idella
Kent, Gertrude E.
Kimball, H. S.
Kyle, Mary A.
Learned, K. A.
Leland, Ada
Leland, Ella A.
Littlefield, Annie G.
Lonnegan, Theresa C.
Lothrop, Charlotte N.
Macomber, Ella L.
Maguire, Agnes E.
Major, Mary A.
Mansfield, Adeline S.
Mason, Kate A.
McCarty, Mary A.
McCleary, Maria L.
McDonald, Elizabeth
McDonald, Mary J.
McDowell, Katherine
McGee, Ellen
McGlinchy, Hannah L.
McIntosh, Jeannie
Merrill, C.
Merrill, Frances M.
Merrill, Lucy
Middleby, Annie B.
Minns, Grace W.
Morrissey, L. M.
Moulton, Emily F.
Nelson, Maria L.
Newcomb, Frances R.
Nichols, Edith
Nichols, Esther F.
Nowell, Charlotte E.
O'Connor, Mary E.
Page, Caroline E.
Palmer, Mary
Pecker, Annie J.
Phippen, Annah L.

Pike, Charlotte A.
Piper, Harriet
Polley, Louise F.
Porter, Mary E.
Power, Kate M.
Powers, Josephine A.
Putnam, Flora L.
Putney, L. F.
Ramsdell, Ida M.
Redlon, Juliette F.
Regan, Annie J.
Rice, H. J.
Robinson, Clara E.
Robinson, Edith V.
Rowe, Grace
Rust, Winnifred A.
Seaman, Alice A.
Seavey, Adeline E.
Shapleigh, Ida F.
Shepard, Alice
Shepard, L. G.
Shine, Mary E. T.
Shove, Lucy E.
Snow, Ellen C.
Souther, Annie L.
Stafford, Lucy C.
Stearns, Marion C.
Swett, Miriam B.
Thayer, Mabel C.
Tucker, H. M.
Tucker, N. B.
Turner, Mary C.
Waite, A. M.
Wales, S. L.
Ward, Martha E.
White, Ellen M.
White, Mary E.
Wilder, Mary E.
Wilson, L. E.
Wilson, Sarah W.
Winsor, Annie F.
Wood, Ella F.
Woodward, Mary L.

JUNIOR CLASS.

Abercrombie, Mary E.
Agnew, Emily J.
Allen, Agnes M.
Anderson, Ellen A.
Atkins, Etta A.
Austin, L.
Bartlett, Edith S.
Baxter, Eleanor N.
Bemis, Ella F.
Bennett, N. M.
Birchmore, Juliana
Blackwell, Cora A.
Blanchard, Helen M.
Blodgett, D. A.
Bonnar, Isabella G.
Boston, Annie M.
Brady, Mary E.
Breckenridge, Ida J.
Brogan, Ellen L.
Burbank, D. E.
Burditt, Harriet A.
Burns, C. W.
Capen, L. R.
Chase, Ella F.
Cleary, Edith L.
Cliffe, L. T.
Cobleigh, Emma S.
Cochran, Emma A.
Cogswell, Florence H.
Colburn, Susan M. H.
Collins, N. V.
Coolidge, Grace F.
Copeland, N.
Courtney, Eliza A.
Crooker, Ellen B.
Cronan, Mary B.
Crotty, Bridget A.
Crowly, Mary A. F.
Cudworth, Emma A.
Curran, Margaret A.
Cutting, N. W.
Damon, Emma L.
Damon, Mary A.

Daniels, Florence S.
Dawson, Eleanor J.
Dickey, Alice M.
Dix, Mary G.
Dodd, Helen B.
Dorgan, Catharine E.
Downs, Cora C.
Doyle, Catharine E.
Duggan, Julia A.
Dunn, Clara C.
Dunnels, N. M.
Dyer, Mary L.
Eddy, Herminia W.
Fairbanks, Ella M.
Farrington, Mary A.
Fearing, Sarah J.
Fenno, Emma A.
Fisk, Sarah B.
Fitzgerald, Mary L.
Fogarty, Sarah G.
Foote, Mary H.
French, Nancy S.
Fuchs, Ella
Fuller, Medora O.
Gardiner, Melissa J.
Gates, Ada L.
George, Isabel P.
Gilchrist, Henrietta
Gillespie, Katharine E.
Goddard, Annie D.
Godet, Sarah E.
Goodwin, Mary B.
Greeley, C. G.
Gustin, Belle
Hale, C. T.
Hale, Kate R.
Harriman, Georgette
Harrington, Mary E.
Haskell, Ella F.
Hatch, Flora A.
Hedge, Elizabeth B.
Hennessey, Catharine A. A.
Hersey, Ada H.
Hildreth, Lillian F.
Hill, Georgiana
Hodsdon, Emily F.

Holmes, Margaret L.
Horton, Emma F.
Howard, Alice P.
Howard, Emma C.
Howard, Emma G.
Howes, Lydia A.
Hunting, Clara L.
Hurley, Mary A.
Hutchings, Lydia A.
James, Ellen F.
Jenkins, Ella C.
Jennings, Jessie F.
Johnston, Florence N.
Johnston, Grace D.
Jones, Mary G.
Keeler, Emma E.
Kelley, Margaret E.
Kennedy, Sarah F. E.
Kidney, Mary A. W.
King, B. L.
Kingman, Adelaide P.
Knapp, Mary G.
Knight, F. L.
Knowles, C. W.
Leonard, Dora M.
Libbey, Georgie A.
Lincoln, Marie C.
Linton, K.
Livermore, Elizabeth B.
Locke, Mabel W.
Lothrop, Florence M.
Macrae, Evaline A.
Macumber, Zoe L.
Mahoney, Mary E.
Mann, H.
Manning, Susan H.
Marble, Ida C.
Martin, Delia
Mason, Ella N.
Mason, K. M.
Maxwell, Lydia S.
Maynard, Emma R.
McCarthy, Mary A.
McCarty, Catharine A.
McDonald, Agnes G.
McDonald, Elizabeth

McNulty, Margaret A.
McSweeney, Margaret
Meade, Helenor F.
Merriss, Annie I.
Miller, Alice T.
Millett, Emily M.
Mills, Harriet E.
Mitchell, Ella W.
Moody, L. A.
Morgan, N. G.
Morse, Mary E.
Moulton Lillian A.
Mower, Jeannie M.
Munro, Martha H.
Munroe, Susan E. H.
Murphy, Margaret C.
Naughton, Mary H.
Nichols, Ellen A.
Nichols, Henrietta
Nickerson, Annie L.
Nolen, Mary A.
O'Neil, Mary
O'Neil, Mary J.
O'Neil, N. M.
Orr, Ella A.
Palmer, Elizabeth
Palmer, Mary A.
Parker, Ellen G.
Parker, Mary E.
Parnell, Florence A.
Patterson, Mary E.
Payne, Blanche
Pelton, Marion L.
Phelps, Anna R.
Phelps, Mary E.
Phinney, Sophronia H.
Pierce, Alice J.
Pierce, Mary E.
Pierce, N. A.
Pingree, N. F.
Pitman, Mary E.
Plummer, Cora F.
Plummer, Laura S.
Pow, Isabel B.
Powers, Ellen E.
Prince, Pauline

Putnam, Susan V.
Reid, Almira C.
Reid, Margaret A.
Richardson, Helen C.
Ridgway, Jeannette S.
Riedell, Ella G.
Ring, Lucinda A.
Roberts, Agnes A.
Robinson, Mary G.
Rockwood, Annie A.
Rockwood, Elizabeth D.
Rollins, H. H.
Russell, Laura S.
Rutledge, Mary E.
Ryder, Harriet E.
Safford, Georgiana M.
Seavey, L. M.
Sellingham, L. B.
Shaw, Grace E.
Sherman, Louise C.
Simmons, Emma F.
Simonds, A. L.
Simpson, Ida F.
Smith, Etta A.
Smith, Ida M.
Smith, Lucy W.
Smith, N. H.
Stafford, Emma J.
Stevens, Helen L.
Strauss, Theresa
Stuart, Amanda M.
Sturtevant, F.
Sullivan, Cornelia M.
Swett, Florence P.
Thayer, Alice J.
Thompson, Ida F.
Torrey, Cordelia G.
Tower, A. E.
Twigg, Elizabeth F.
Vannevar, C. I.
Varney, Alice K.
Vinal, C. F.
Wallingford, Emma L.
Walsh, Mary C.
Ward, F. E.
Warren, Ellen

Warren, Martha N.

Warren, M. S.

Wedger, Ella C.

Welch, Sarah E.

Wells, Annie G.

Wentworth, Lydia G.

Wheeler, Alice W.

Wheelock, Laurette H.

White, Alice F.

White, Ellen M.

White, Jennie A.

Whiting, Mary A.

Whiton, Jennie W.

Whiton, L. L.

Wiggin, Fredeline A.

Wilkins, L. J.

Willard, C. E.

Williams, Alice C.

Wing, Annie F.

Woodward, L. J.

BOSTON NORMAL SCHOOL.

This school has just completed its twenty-first year, having been established by the City Council, on the recommendation of the School Committee in 1852. The vote establishing it was twenty-nine to eight in the Common Council, and unanimous in the Board of Aldermen.

As there was no High School for girls, various High School studies were gradually introduced into the Normal School, until the Normal element came to hold a secondary place.

A desire more fully to meet the wants of the public schools, for a supply of competent teachers, led the School Committee, in 1872, to restore the Normal School to its original condition, as a separate institution.

Provisions for the accommodation of the school were made by the City Council in September, 1872.

The past year has been one of faithful and successful labor on the part of both pupils and teachers. Seventy young ladies, mostly graduates of our High Schools, availed themselves of the advantages of the Normal School.

The committee are gratified in being able to report the school as promising even more for the coming year than for the past. The number of pupils is greater, every seat being filled; and the earnestness with which they enter upon the special preparation for their future work gives assurance of their progress as pupils, and their future usefulness to the city as teachers.

The committee cordially commend the Normal School to the constant watchfulness of the School Board, as an institution indispensable to the best interests of the public schools of Boston.

Respectfully submitted.

CHARLES HUTCHINS, *Chairman*,
MOODY MERRILL,
JOHN NOBLE,
GEORGE A. THAYER,
WM. H. LEARNARD, JR.,
WM. B. MERRILL,
JOHN P. ORDWAY.

CATALOGUE OF THE TEACHERS AND PUPILS OF
THE BOSTON NORMAL SCHOOL, SEPTEMBER, 1873.

HEAD-MASTER.

LARKIN DUNTON.

HEAD-ASSISTANT.

JANE H. STICKNEY.

ASSISTANT.

FLORENCE W. STETSON.

PUPILS.

Abbott, Jennie
Adams, Sarah L.
Adams, Helen M.
Ashley, Cora I.
Badlam, Anna B.
Baker, Carrie L.
Baker, Ella
Bailey, Elizabeth G.
Bent, Nathalia
Bickford, Harriet A.
Bingham, Delia
Bradley, Anna J.
Bradley, Mary
Buckley, Rebecca H.
Challis, Julia
Chittenden, Ella L.
Conley, Mary E.
Copeland, Mary C.
Crozier, Annie M.
Cushing, Alice M.
Cutter, Lucy R.
Deane, Ella C.
Dean, Maria L.
Dolan, Mary A.
Dole, Melissa M.
Donegan, Marcella E.
Drew, Annie E.
Edwards, Clara

Fitzgerald, Katie E.
Grady, Margaret E.
Graham, Sarah M.
Hamilton, Hannah L.
Harrington, Ellen E.
Haydn, Carrie W.
Hildreth, Emily E.
Hill, Henrietta A.
Hill, Silence A.
Holbrook, M. Ava
Holbrook, Emma L.
Howe, Florence, A.
Hooper, Julia M.
Johnson, Lucy E.
Jones, Maria
Killion, Delia T.
Littlefield, Hattie A.
Mann, Mary E.
McDermott, Nellie C.
Mitchell, Annie M.
Mulliken, Mary E.
Mulroy, Elizabeth D.
Noyes, Eliza R.
Noyes, Helen M.
Olmstead, Emma C.
Oviatt, Martha S.
Porter, Electa M.
Powers, Mary B.

Pickering, Amanda
Plummer, Evelyn E.
Pratt, Mary E.
Ramsay, Helen E.
Riley, Margaret F.
Ryan, Alice C.
Sanborn, Lizzie A.
Shepherd, Marietta D.
Soule, Ella F.
Stetson, Annabel

Summers, Katharine S.
Swett, Persis I.
Talpy, Emma C.
Torrey, Emeline E.
Towle, Mary E.
Tidd, Alma
Viles, Laura E.
Wadsworth, Mary L.
Wallace, Ellen L.

ROXBURY HIGH SCHOOL.

This school has closed another of its many years of prosperity, achieving a most successful work, and ranking itself among the best schools of the city. With its efficient head-master and his corps of able assistants, combined, too, with its desirable location, and eight well-ventilated rooms, committee and parents need not be surprised at the successful results which it yearly submits. This school, during the past five years, has been extending itself beyond its capacity and equipments, taxing patience of both teacher and pupil. But, despite the utmost inconvenience and lack of class-room and appurtenances, steady progress has been maintained; and we are sure that no school sends forth better-fitted candidates for a useful life-work than the Roxbury High School. It is to be sincerely hoped, however, that the proposed plan for the enlargement and improvement of the building will be immediately approved, and that the city will authorize at once every needed facility, when it will be so faithfully used and appreciated.

Respectfully submitted.

IRA ALLEN,

For the Committee.

CATALOGUE OF THE TEACHERS AND PUPILS OF
THE ROXBURY HIGH SCHOOL, SEPTEMBER, 1873.

HEAD-MASTER.

S. M. WESTON.

HEAD-ASSISTANT.

M. LOUISE TINCKER.

ASSISTANTS.

EMILY WEEKS,
ELIZA D. GARDNER,
HELEN A. GARDNER,EDNA F. CALDER,
CLARA H. BALCH.

TEACHER OF FRENCH.

MATHILDE DE MALTCHYCE.

TEACHER OF GERMAN.

JOHN FREDERICK STEIN.

TEACHER OF DRAWING.

BENJAMIN F. NUTTING.

TEACHER OF MUSIC.

JULIUS EICHBERG.

INSTRUCTOR IN MILITARY DRILL.

LIEUT.-COL. HOBART MOORE.

PUPILS.

EX-SENIORS.

Crooker, Sibyl T.
Dexter, Addie Frances
Faxon, Maria D.Gray, Nellie
Harris, Susan Burley
Perrin, Mary Esther
Pishon, Eva
Worthen, Etta M.

SENIOR CLASS.

Boys.

Adams, Harry Franklin
Bardonhoff, Chas. Frederic
Berry, William Frederic
Browne, Louis L'Ecluse
Cordingley, William Robert
Costello, John Edward
Engel, Joseph Isaac
Faxon, William Augustus
Fowle, William Parker
Gray, William
Hodges, Edward Carroll
Hodges, Frank Herbert
Holbrook, Joseph Barnard
Hunneman, William Cooper
Klous, Henry Dudley
Lang, George Henry
Libby, Clarence Jenness
Lockney, John Francis
Monroe, George Ellis
Parry, Charles Edward
Rice, Freeman Gill
Rumrill, Frank
Ryan, James Francis
Ryerson, Frank Edward
Scanlan, Michael James
Stockwell, George Stephen
White, Arthur Howard
Williams, Samuel

Girls.

Aull, Elizabeth Ellis
Bean, Mary Heywood
Bowdlear, Ellen Hadley
Cotter, Elizabeth
Curtis, Caroline Walker
Deane, Mary Emma
Deane, Sarah Elizabeth
Dibblee, Agnes Ide
Grand, Eliza Theresa
Hart, Lydia Jane
Haynes, Catherine

Hewitt, Mary Hallock
Leavitt, Ellen Willietta
Merrill, Emma Louise
Morrill, Josephine Russell
Mulliken, Harriet Davenport
Murphy, Julia Mary
Murphy, Mary Agnes
O'Connell, Fannie Louise
Parker, Abbie Durant
Pike, Mary Olive
Pishon, Lucretia
Rider, Francena Ella
Scarlett, Margaret E.
Shaw, Ellen Cora
Shedd, Ella Jeannie
Smith, Addie Martha
Waite, Salome Anthony
White, Abbie Elizabeth

MIDDLE CLASS.

Boys.

Carleton, Elbridge Winthrop
Cose, William Edgar
Cram, Sylvanus Rich
Donnelly, Walter William
Dolan, Edwin Joseph
Elson, Alfred Walter
Foley, Frank Matthew
Goldthwait, Charles Brown
Grady, Thomas, Jr.
Gray, Henry
Hawkins, Daniel Hoff
Howe, Edwin Allyn
Hutchins, John Hurd
Jacobs, Arthur Loring
Kelley, John Bernard
Kendall, Frederic
Loobey, James Edward
McDonald, Charles Howard
Mulvey, James Paul
Rivinius, George Franklin
Rousemaniere, Edward Swett
Shea, John Francis
Sutton, Samuel Fernald

White, Henry B.
Wyman, William Hutchinson

Girls.

Barton, Ida Louise
Bean, Elizabeth Charlotte
Caldwell, Harriet Eliza
Cordeiro, Alice M. B.
Fineran, Hannah Gertrude
Gerber, Emma Jane
Greene, Ella Mary
Gullbrandson, Annie S.
Hildreth, Minnie Caroline
Howe, Josephine J.
Kilroy, Esther
Lincoln, Minnie Louisa
McLaughlin, Lizzie J.
McLellan, Annie Corinne
Moody, Ella
Moulton, Helen Lyford
O'Connell, Elizabeth Eleanor
Partridge, Flora Almira
Putnam, Emma
Richards, Anne Bullard
Ryan, Mary Catherine
Seaver, Annie Isabella
Seaverns, Annie Walton
Stevens, Grace Cornelia
Watson, Mary Emma
Whelton, Annie Josephine

JUNIOR CLASS.

Boys.

Atwood, Reviere Elkanah
Behr, George
Berran, John Daniel
Blodgett, Walter Clifford
Brock, Charles Smith
Brown, Frank Norris
Buchanan, John Henry
Burrows, Henry James
Campbell, Charles Henry
Coffin, Frederic Seymour
Cook, Edmund H.
Cunningham, Frank Herbert

Edmands, William Howard
Ellis, Herbert Frederic
Flint, George Herbert
Folsom, Frank Henry
Gay, William B. D.
Gemeiner, Frank C.
Greenlaw, James
Hamblin, Matthew Prior
Harmôn, Samuel Tappan
Hunter, Frederick S.
Johnson, George Frederick
Kelley, John L.
Lord, Charles Edgar
Maher, David J.
McCormick, Edward Joseph
Miller, William John
Mitchell, John W.
Morse, Frank Webster
Morton, Nathaniel Bowditch
Mulliken, George Henry
Murphy, John Henry
Nason, William Livermore
O'Brien, Thomas C.
Putnam, John Hunter
Soule, Hermann Curtis
Stanton, Edmand M.
Stanton, John A.
Stone, Charles Sinclair
Tanck, Henry C.
Tappan, Josiah Edward
Thompson, Frederic Augustus
Tobey, Rufus Tolman
Van Raalte, Albert
Ward, William Albert
Weis, Frank Mannert
White, Henry B.
Wiggin, Henry Young
Yeaton, Harvey Willis

Girls.

Aldrich, Annie Eliza
Alden, Lottie Bassett
Alexander, Carrie Adeline

Baldwin, Madge P.
 Bemis, Lizzie A.
 Bowen, Emma Frances
 Burrell, Gertrude Amelia
 Came, Alice
 Card, Lucy Gray Morse
 Chamberlin, Mary Isabella
 Conant, Belle Parker
 Daniels, Lucy Maria
 Devereux, Mary Martha
 Duffy, Susie Anna
 Egan, Sabina
 Ellis, Lizzie E.
 Heintz, Julia
 Howard, Ella Winchester
 Hubbard, Mary
 Hutchins, Alice Maria
 Lane, Alice Gertrude
 Leavitt, Hannah Gertrude
 Littlefield, Carrie Josephine
 Lothian, Clara Frances
 Lunt, Lizzie Delana
 McGlew, Louise Elizabeth

Merritt, Laura Eva
 Moore, Phœbe A.
 Murphy, Mary
 Nason, Elizabeth Theobald
 Nay, Eva Maria
 Osgood, Henrietta Maria
 Procter, Grace B.
 Resterrick, Mabel Cora
 Rockwood, Annie A.
 Scanlan, Minnie Agnes
 Sheehan, Mary Agnes
 Stetson, Emily Josephine
 Stockman, Alice Gertrude
 Streeter, Angela Mellish
 Thaxter, Martha Jane
 Thompson, Lillian Frances
 Tucker, Mary Louisa
 Weiler, Lena
 Wells, Emily Fidelia
 White, Mary Emma
 Williams, Maude F.
 Worthen, Annie Isabelle

DORCHESTER HIGH SCHOOL.

The General Statutes of Massachusetts provide that every town containing five hundred families or householders shall maintain a High School, in which certain higher branches of study shall be pursued; and that in every town of four thousand inhabitants or more certain other higher branches of learning shall be included in the course. Smaller towns are encouraged to unite, when contiguous, in bearing the burden of expense in maintaining such schools. High-School education has therefore become a part of the public-school system of the State, though its privileges have not yet been extended to all the sparsely populated towns. There are nearly two hundred of these schools in the State; and their relation to the graded schools becomes an interesting and important matter for the consideration of those entrusted with the care and management of the system. In the cities and larger towns the theory of the education of the child from his admission to the Primary till he receives the finishing touches in the High School, is supposed to be as perfect as the industrial, social and religious conditions of the population will admit, however lamentably it may fail, in some instances, to be carried into operation. Even those who intend to complete their education at the

university are provided for at the public expense up to the time of their admission to college.

The State undertakes in the large towns to extend the education of the people, in the High Schools, beyond the branches taught in the Grammar or district schools; to give the sons and daughters of the laborer, the mechanic, the farmer, and of all others who choose to avail themselves of it, an education which shall include something more than the simple rudiments of learning; in a word, to make intelligent men and women of them, without regard to their future occupation or social standing. As a matter of fact, only a comparatively small number are able to profit by the opportunity which the State thus beneficently extends to all. While many parents still believe that any culture beyond the essential reading, writing, and arithmetic, to those intended for industrial pursuits, is useless, and involves an irredeemable waste of time, the stern law of necessity compels many others to deprive their children of the higher course of study, which they fully realize would be a benefit and a blessing to them. Doubtless the value, if not the need, of more learning than the Grammar Schools afford, is more generally recognized in the larger cities than in the rural and manufacturing districts, and in a city like Boston, which is an acknowledged centre of literary and artistic culture, it would be regarded as more important than in other less favored communities.

In this connection, the table showing the number of pupils sent to the High Schools by each Grammar School, in the twenty-seventh annual report of the

Superintendent of Public Schools, is exceedingly interesting and valuable, especially when compared with the number of scholars who received the diploma of graduation in the same year. The whole number who passed from the Grammar into the High Schools, in accordance with the theory of our educational system, was seven hundred and five, while one thousand and four have graduated at the lower schools. Thus it appears that about three hundred, or less than one third of the number of graduates, fell out of the line by the way; which, considering the democratic character of the public schools, is an excellent showing of the educational spirit of the people. While the number sent by some of the schools seems to be unreasonably small, that of others is as unreasonably large. Two schools, whose pupils are almost exclusively the children of the foreign population of their locality, a large majority of whom are common laborers, send fifty per cent. of their graduates to the High School.

The High Schools graduate less than fifty per cent. of those admitted; for the same reasons which prevent one-third of those who have passed through the Grammar Schools from seeking admission to them continually operate to diminish the number of those who pursue the advanced course.

Two of the five High Schools existing in the city in 1872-73 were organized upon the town High School plan, and instruct pupils of both sexes. In the City Proper three separate schools — the Latin, the English High, and the Girls' High School — do the same work for as many different classes of scholars,

as is done by the other two. Compared with the average whole number of pupils belonging (Jan. 31, 1873), —

	Per cent.
The Latin graduates,	10 $\frac{7}{10}$
The English High graduates,	17 $\frac{5}{10}$
The Girls' High “	16 $\frac{9}{10}$
The Roxbury High “	25 $\frac{6}{10}$
The Dorchester High “	32 $\frac{5}{10}$

From this statement it appears that the last two, each instructing both sexes, succeed best in retaining their pupils through the course of study; and thus more nearly carry out the theory of the school system.

Compared with the number entering these schools, respectively at the beginning of the year, —

	Per cent.
The Latin graduated,	37
The English High graduated,	36
The Girls' High “	37
The Roxbury High “	67
The Dorchester High “	75

The accident of an unusually large number of admissions in one year, the different standards required for graduations in the schools, and other unequal circumstances, somewhat affect the result; but the showing of these statistics, confirmed by the observation of those who have given attention to the subject, is that the co-education of the sexes in the High School, without regard to philosophical or physiological considerations, is a feature which assists in increasing the comparative number of graduates.

The Dorchester High School receives its pupils from the district whose name it bears, none from the City Proper or Roxbury attending; and it is, therefore, a local school. Its relations to the Grammar Schools are almost wholly confined to those in its own district. It is able to accommodate all the High-School scholars in its territory, though a considerable number of them attend the other High Schools.

The following table exhibits the number of graduates of each Grammar School in Dorchester, and the *per cent.* of this number admitted to the Dorchester High School: —

	Graduates.	Per cent.
Everett,	12	33
Gibson,	2	50
Harris,	18	56
Mather,	17	41
Minot,	16	50
Stoughton,	15	53
Tileston,	10	70
	—	
Total,	90	

In addition to the above the Everett sent four scholars to the Latin, and three to the Roxbury High School; and the Harris sent two to the Girls' High School.

In the six largest schools of the city proper the number of graduates was *five and six tenths per cent.* of the average whole number (July, 1873). In the six smallest schools (exclusive of those of Dorchester) the proportion was just the same. In the Dorchester Grammar Schools *seven and six tenths per cent.* were graduated. The number graduated in each school compared with the average whole number belonging (July, 1873) was as follows: —

	Per cent.
Everett,	5 $\frac{2}{10}$
Gibson,	1 $\frac{4}{10}$
Harris,	8 $\frac{3}{10}$
Mather,	7 $\frac{7}{10}$
Minot,	10 $\frac{8}{10}$
Stoughton,	9 $\frac{9}{10}$
Tileston,	12 $\frac{8}{10}$

Of the ninety scholars who were graduated at the Grammar Schools of Dorchester, fifty-five entered the Dorchester High School, and nine entered other High Schools; making a total of sixty-four,—*seventy-one per cent.* of the whole number graduated.

The number of scholars passing from the Grammar into the High School depends, to some extent, often to a great extent, upon the views of the masters of the former, and their influence over their pupils; though, in turn, these views and the exercise of this influence are modified by the action of those controlling the management of the High Schools. The reputation of the master as a teacher is based in some degree upon the percentage of correct answers obtained by his pupils in the examination for admission to the higher school. Those scholars who are not supposed to be able to reach the required standard are often kept back, sometimes influenced, directly or indirectly, to learn a trade or "go into a store," in preference to seeking the advantage of a more extended education. Five scholars obtaining an average of ninety per cent. is supposed to be a more honorable record for the master than ten with an average of seventy-five per cent., or just reaching the standard of admission. The teachers of the Grammar and

High Schools are entitled to just as much credit for faithfully instructing dull and stupid scholars, who may never attain even "fifty per cent. of correct answers," as for leading on the bright ones, who can hardly fail to obtain the high figures. The dull ones, for whom nature has done the least, need the most at the hands of the instructors. Though the fact that a scholar is stupid may be a good reason why he should not be sent to the university or encouraged to enter the learned professions, it is no reason why he should be debarred from whatever benefit he may derive from a High-School education. After the Grammar School has done all it can do for him, while he is at a proper age to attend the lower grade, he ought not to be shut out from the public High School because he cannot obtain the required per cent. for admission; nor be deprived of his diploma at the end of his course, for the same reason, if he has been reasonably attentive to his studies.

So far as the regulations would permit, the Dorchester High School has been conducted upon this principle. Applicants who have attained the age of sixteen years, and have passed through the Grammar-School course, have been admitted, though they failed to obtain the percentage required for admission under ordinary circumstances. In some instances the happiest results have followed this variation of the rule, and in all cases the school has been a benefit to those who attended it.

It is to be hoped that the time is not far distant when the diploma of graduation from the Grammar will be a sufficient "pass" into the High Schools.

The committee believe the Dorchester High School has faithfully rendered the service required. All the teachers, regular and special, have discharged their duty with conscientious fidelity. Considerable additions have been made to the library, and to the philosophical and chemical apparatus, from the portion of the income of the Gibson Fund assigned to this school by the committee. The building and grounds are in excellent condition, and are well cared for by the janitor, under the supervision of the head-master.

For the Committee of the Dorchester High School,

WILLIAM T. ADAMS,

Chairman.

CATALOGUE OF THE TEACHERS AND PUPILS OF THE DORCHESTER HIGH SCHOOL, SEPT., 1873.

HEAD-MASTER.

ELBRIDGE SMITH.

HEAD-ASSISTANT.

MARY WENTWORTH HALL.

ASSISTANTS.

REBECCA VINAL HUMPHREY, HARRIET BYRON LUTHER,
ANNIE HEDGE NOBLE.

TEACHER OF MUSIC.

JULIUS EICHBERG.

TEACHER OF DRAWING.

MERCY A. BAILEY.

TEACHER OF FRENCH.

CHARLES DE LAGARLIÈRE.

TEACHER OF GERMAN.

JOHN F. STEIN.

TEACHER OF MILITARY DRILL.

LIEUT.-COL. HOBART MOORE.

PUPILS:

EX-SENIORS.

Baynton, Walter
Childs, Harold Chessman
Sproul, Arthur Eliot
White, Willie Gardner

Girls.

Bailey, Alice Howard
Brown, Fanny Bates
Cushing, Anna Quincy

Horton, Lillian Howard
Mann, Elizabeth Benson
Preston, Edith Lee

SENIORS.

Boys.

Allbright, William Broughton
Bent, Charles Henry
Chadbourn, Henry

Hemmenway, Edward Augustus
 Kirk, Joseph
 Perrin, William Brown
 Robinson, James Leavitt
 Ufford, Charles Augustus

Girls.

Barlow, Abby Ella
 Brooks, Agnes Alvira
 Carlton, Mary Jane Milly
 Cook, Harriet Maria
 Edwards, Elizabeth Caroline
 Emery, Carrie Maria
 Esterbrooks, Emma Martha
 Goodale, Mary Emma
 Hersey, Louisa Eliza
 Merriam, Eleanor Hayes
 Nichols, Minnie Louise
 Ordway, Annie Freeman
 Porter, Clara
 Spargo, Ida Thankful
 West, Mary Minot
 Whitney, Mary Jane
 Worsley, Julia Bartlett

MIDDLE CLASS.

Boys.

Bradley, Charles Wesley
 Cook, John Henry
 Eddy, John Lodge
 Elder, William
 Hibbard, Arthus Augustus
 Knapp, Edward Lawrence
 Mosely, Frederick Clark
 Myrick, Merrill
 Piper, George Augustus
 Pratt, Charles Dudley
 Sharp, Everett Howe
 Smith, Frank Cyrus
 West, John Minot
 Wentworth, Edward Spencer

Girls.

Anderson, Jane Allison
 Austin, Catherine Downer

Buckpit, Fanny Arabella
 Brooks, Elizabeth
 Callender, Adaline Jones
 Cowling, Miriam Louisa Stayne
 Cutter, Elizabeth Learoyd
 Darling, Carrie May
 Dix, Eva Clara
 Fifield, Mary Sanborn
 Foley, Mary Theresa
 Glidden, Annette
 Jacobs, Bertha
 Jones, Josie Alena
 Knapp, Mary Augusta
 Littlefield, Carrie May
 Peckham, Lizzie Anna
 Reid, Jennie
 Smith, Emma Louise
 Tavener, Grace
 Tucker, Mary
 Walker, Genie
 Wall, Alba Elizabeth
 Whall, Sarah Antoinette
 Whitney, Helen Josephine
 Work, Annie Crosby

JUNIOR CLASS.

Boys.

Arnold, Edward Walter
 Butterfield, John Charles
 Burt, Waldo Cushing
 Butland, Wallace
 Collins, Edwin Dunbar
 Collins, Edward
 Houghton, Charles Ellis
 Jenkins, Edward Francis
 Kendall, Harry Sullivan
 Moore, Nathaniel Lowe
 McEttrick, Matthew
 Oakman, Henry Philip
 Parker, Theodore
 Perrin, Stephen Payson
 Pratt, Ebenezer Kendall
 Tilden, Frank Winfred
 Upshur, Lovell
 Williams, Benjamin Payson

Girls.

Austin, Ellen Augusta
Adams, Ida Helen
Adams, Emma Louisa
Benedict, Fanny Elizabeth Bates
Brannon, Annie Jane
Burgess, Helen Frances
Downing, Mattie Eliza
Dean, Alice Walker
Everett, Edith Warren
Gould, Marion Ilione
Gurney, Eurilla Elizabeth
Glennon, Rose Anna
Homes, Florence Wilbur
Houghton, Charlotte Abby
Hayward, Lizzie Jane
Lynch, Addie Pamela

Lynch, Elizabeth Atwood
Moseley, Annie
Mann, Louise Sewall
McKendry, Agnes Howard
Murphy, Marion Eliza
Nelson, Mary Delavan
Phipps, Annie Maria
Porter, Ida Amelia
Robinson, Eunice Elizabeth
Ryder, Mary Emma
Ricker, Julia Marland
Scudder, Edith Frances
Stearns, Ardelle Augusta
Tucker, Kate Winifred
Twombly, Georgiana Meserve
Urann, Grace
Wheeler, Grace
Willis, Mary Elizabeth Bispham

REPORTS

OF THE

SUPERINTENDENT OF PUBLIC SCHOOLS

FOR THE YEAR ENDING

AUGUST 31, 1873.

REPORT.

To the School Committee of Boston:—

GENTLEMEN,—In conformity with the requirements of your regulations, I respectfully submit the following as my Thirty-Eighth Report, the same being the Twenty-Sixth of the semi-annual series.

Summary of Attendance for the half-year ending January 31, 1873.

GENERAL SCHOOLS.	No. Schools.	Average belonging.	Average attend'nce.	Average absence.	Per cent. of attendance.	No. at date.
High.....	6	1,803	1,705	98	94.0	1,793
Grammar	37	18,757	17,474	1,283	93.1	18,597
Primary	340	14,847	13,375	1,472	89.1	14,674
Totals	383	35,407	32,554	2,853	92.0 [av.]	35,064

SPECIAL SCHOOLS.	No. Schools.	Average belonging.	Average attend'nce.	Average absence.	Per cent. of attendance.	No. at date.
Licensed Minors.	2	52	44	8	85.0	52
D'f Mute School.	1	47	.....	.....	.....	47
Kindergarten....	1	18	12	6	.....	18
Evening High ..	1	765	336	.....	.....	560
Evening.....	10	1,794	874	.....	.....	1,286
Even'g Drawing.	2	326	148	.....	.....	375
	17	3,002	1,414	.....	.....	2,338

HIGH SCHOOLS.

The following table shows the number of teachers, the average number of pupils, and the average number of pupils to a teacher, in each of the High Schools, during the half year, ending January 31, 1873.

SCHOOLS.	No. of Teachers.	Average No. of pupils.	Average No. of pupils to a Teacher.
Latin.....	10	206	20.6
English High.....	18	571	31.7
Girls' High and Normal	26	632	24.3
Normal.....	5	55	11.0
Highlands High.....	7	215	30.7
Dorchester High	5	136	27.2
Totals.....	70	1,815	25.6

The number of pupils to a teacher in the Normal School, as presented in the above table, is not strictly correct, as one of the five teachers with whom the school is charged, has been employed very profitably, most of the time, in the Primary Schools, in illustrating, for the benefit of the teachers, the best way of teaching the first steps of reading according to Dr. Leigh's method. Besides, since the date of the above returns, another class has been admitted to the school.

GRAMMAR SCHOOLS.

The following table shows the number of teachers and average whole number of pupils, and the average number of pupils to a teacher (not counting the master's head assistant), in each Grammar School, for the half year ending January 31, 1873.

SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.	SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.
Adams.....	12	464	42.2	Lawrence ..	18	826	48.6
Bigelow.....	20	894	47.1	Lewis.....	13	613	51.1
Bowditch....	13	453	37.7	Lincoln	17	808	50.5
Bowdoin.....	11	460	46.0	Lyman	13	577	48.1
Boylston....	10	375	41.6	Mayhew....	12	431	39.2
Brimmer....	15	569	40.7	Norcross ...	15	683	48.8
Chapman....	12	457	41.5	Phillips	13	525	43.7
Comins.....	18	800	47.1	Prescott....	13	616	51.3
Dearborn....	17	775	48.4	Quincy.....	12	522	47.4
Dorch'r Dist.	36	1128	38.9	Rice	14	605	46.5
Dudley.....	7	257	42.8	Sherwin....	18	793	46.6
Dwight.....	12	561	51.0	Shurtleff....	15	667	47.6
Elliot.....	16	615	41.0	Washington	7	262	43.7
Everett.....	15	664	47.4	Wells.....	11	399	39.9
Franklin....	15	643	45.9	Winthrop...	18	683	40.2
Hancock....	18	632	37.2	Totals.....	456	18,757	44.7

The average number of pupils to a teacher during the last half year was 44.7 against 46.3 for the corresponding period of the last school year.

PRIMARY SCHOOLS.

The following table shows the number of primary pupils in each district, and the *average number of pupils to a school or teacher, during the last half year*:—

DISTRICTS.	No. of Schools.	Whole Number.	No. to a School.	DISTRICTS.	No. of Schools.	Whole Number.	No. to a School.
Adams	9	415	46.1	Lewis	10	505	50.5
Bigelow	13	595	45.7	Lincoln	11	589	53.5
Bowditch ...	10	302	30.2	Lyman	8	360	45.0
Bowdoin ...	11	411	37.3	Mayhew	7	240	34.3
Boylston ...	6	288	48.0	Norcross	14	646	46.1
Brimmer ...	12	408	34.0	Phillips	7	248	35.4
Chapman ...	10	438	43.8	Prescott	10	486	48.6
Comins	18	888	49.3	Quincy	11	378	34.3
Dearborn ..	17	813	47.8	Rice	12	554	46.1
Dorchester.	20	863	43.1	Sherwin	12	579	48.2
Dwight	6	295	49.1	Shurtleff	14	705	50.3
Elliot	16	577	36.1	Washington.	8	341	42.6
Everett	10	556	55.6	Wells	12	482	40.1
Franklin ...	6	263	43.8	Winthrop ...	9	348	38.7
Hancock	19	737	38.8				
Lawrence ..	12	537	44.7	Totals	340	14,847	43.6

The average number of pupils to a teacher during the last half year was 43.6 against 45.6 for the corresponding period of the last school year.

The following table shows the number of primary pupils in each district promoted to the Grammar Schools [Feb. 1], and the average number of promotions to each school in the respective districts:—

DISTRICTS.	No. of Schools.	Sent to Gr. School.	No. to a School.	DISTRICTS.	No. of Schools.	Sent to Gr. School.	No. to a School.
Adams	9	38	4.2	Lewis	10	84	8.4
Bigelow	13	100	7.7	Lincoln	11	74	6.7
Bowditch	10	42	4.2	Lyman	8	43	5.3
Bowdoin	11	54	4.9	Mayhew	7	29	4.1
Boylston	6	46	7.6	Norcross	14	93	6.6
Brimmer	12	65	5.4	Phillips	7	31	4.4
Chapman	10	52	5.2	Prescott	10	43	4.3
Comins	18	139	7.7	Quincy	11	47	4.3
Dearborn	17	88	5.2	Rice	12	103	8.6
Dorchester	20	100	5.0	Sherwin	12	81	6.7
Dwight	6	54	9.0	Shurtleff	14	103	7.3
Eliot	16	63	3.9	Washington ..	8	57	7.1
Everett	10	89	8.9	Wells	12	74	6.2
Franklin	6	37	6.1	Winthrop	9	72	8.0
Hancock	19	81	4.3				
Lawrence	12	95	7.9	Total	340	2,097	6.1

It appears that the average number of promotions to a school was more than a hundred per cent. higher in some districts than in others. The total average was 6.1 per school.

On the opening of the schools after the long vacation, September 2, I commenced a course of inspection of the Primary Schools, and continued the work daily, except when unavoidably diverted from it by other duties, until every one of the three hundred and thirty-six schools was visited. The circuit of visits was completed in about seven weeks from the time of beginning. No notice of my visits was given out beforehand, and in most cases the school-rooms were actually entered by me before the teacher could have had any knowledge of my coming.

Consequently, the schools were seen, for the most part, as they are in their usual routine of operation, and not in holiday attire, going through show performances specially prepared for exhibition and display. These visits varied in length according to circumstances, from a few minutes, to an hour or more, their average duration being probably less than half an hour. It was my aim, in this survey of all the schools of this grade in rapid succession, to get as correct a knowledge, as was practicable, in the time I had to devote to the work, of their actual condition and management, of the tone, spirit and style pervading them, and of the skill, efficiency and fidelity of the teachers.

On entering a school-room, my attention would be directed to such points as these: the temperature and ventilation; the exposure of the children to the heat of stoves and hot-air registers, on the one hand, and cold drafts on the other; the aspect of the pupils, as to whether they appeared cleanly, happy, orderly and attentive to their work; the mode of handling the

classes on the part of the teacher, and her success in the difficult task of keeping the minds of all her pupils properly occupied; whether the teacher was conducting her work on an intelligent and systematic plan, in accordance with a daily time-table, prepared by herself or the master of the district, and also in accordance with the requirements of the programme contained in the regulations; the character of the discipline; how the opening and closing exercises and the recesses were conducted; and what the master of the district had done to promote the progress of the school.

Having completed this tour of inspection, on the afternoon of October 22, a meeting of the Primary teachers, and the masters of the Grammar Schools was held at the Hall of the Girls' High School, at which I presented some of the results of my observations, setting forth the principal excellences and defects which had been noticed, and submitting such suggestions and advice, as to the ways and means of improving the schools, as the circumstances seemed to require. I endeavored to bring together the best traits of different schools, and picture them as constituting a single school of ideal excellence to be kept in view as the model to be imitated by all teachers, contrasting each good element with its opposite, as actually seen in certain schools where improvement was especially needed.

The schools, on the whole, produced on my mind as favorable an impression as I had expected. From year to year no very marked improvement is perceptible; but, looking over a period of ten or twelve years, the

progress that has been made is quite evident and gratifying. The character of the discipline is more satisfactory than it was in former years. I did not hear a single teacher using a harsh or disagreeable tone of voice. Sweet, encouraging, sympathetic tones were almost universal. I found only one or two pupils undergoing punishment, and in those cases the punishment was not what would be called very severe, the delinquents only being required to stand on a bench or chair. In one case corporal punishment had been inflicted upon a boy just before I entered the school.

Almost everywhere the teachers had evidently taken much pains to secure personal cleanliness on the part of their pupils. In one or two districts there were exceptions in this respect, suggesting the need of a little more liberal use of soap and water and hair-brushes, or combs. The school-rooms were, almost without exception, clean and neat; one, however, is quite distinctly remembered as indicating a scarcity of brooms, but justice to the teacher requires me to say that she was teaching her pupils with great efficiency. A great many of the school-rooms were ornamented with plants, which gave them an air of cheerfulness and elegance.

Where a school is composed of only one class, or of two, what I like to see on entering is, half of the pupils standing in an orderly manner, shoulder to shoulder, engaged in reciting or receiving a lesson, while the rest of the pupils are at their desks occupied in preparing a lesson. I do not say that this should *always* be the state of things, but quite generally. But I am sorry to say, that in too many cases nothing

in particular seemed to be going on, the teachers being apparently in doubt as to what should be done next.

We have many teachers whose excellence is worthy of the highest praise. It is hardly possible to over-estimate their value. They afford worthy models for the imitation of others. Often I call up the beautiful images of their schools. But there is one school of surpassing merit, which just now I remember with the greatest pleasure. The building where it is accommodated is by no means the most attractive; the children do not come from the most comfortable homes. And yet, how bright and lovely the school appears! It would be hard to say wherein it could be made better. The teacher is mistress of the situation. She does not fret or worry herself; she neither complains nor apologizes. She does not work harder than many others, and her work seems comparatively light to her, because she loves it. She has tact and a genial disposition. She loves her pupils, and they love her. She is firmness itself, but she is as gentle as she is firm.

The masters have undoubtedly done much valuable service in the Primary Schools of their districts, but it seems to me there is greater difference in this respect than there should be. Would it not be well for the masters occasionally to look into the schools of other districts besides their own?

Writing is not generally so well taught as it might be. The children are too frequently put to writing spelling-lessons and sentences before they know how to form the individual letters. The chief aim in the slate-writing in these schools should be to train the

pupils to make each letter in a fair and handsome form, and with a good degree of facility. There is one school where this has been done faithfully and skilfully for many years, and the pupils show the good results of the system after they go up to the Grammar Schools. Of course, I do not mean to say that Primary pupils should not write words and sentences, but that they should first be well grounded in the *forms of the individual letters*.

As far as I could discover, singing was everywhere well taught; teachers and pupils seemed to be really interested in this branch.

In many schools there is room for improvement in the teaching of numbers. Too much time is wasted by the pupils in writing numerous tables of figures on their slates. The instruction in this branch is too abstract. There are not teachers enough who know how to use to advantage the ball-frame, and other visible illustrations, and so the scholars are not taught *ideas* of number as much as they should be. Here is a case where, in my judgment, the prescribed text ought to be used more than it is. The book is so well planned that it may be safely followed in regular order from beginning to end. It is not necessary to require the pupils to study it much, but they should stand up in class and read and perform the questions until they can do so with facility.

The teachers generally have, I think, a good idea of what reading in Primary Schools should be; but all do not know how to reach the result which they aim at. They do not know how to economize time by making the minds of all the pupils work on the exercise while

in class. The class is called out and kept standing until each pupil in turn reads a sentence or paragraph. This is done once a day, possibly twice. Very little comes of it. The advantage of classification is not utilized. The instruction—what there is of it—is almost wholly individual, because, for the most part, by this method, only one mind works at a time.

With the exception already mentioned of putting children prematurely to write columns of words on their slates, spelling appeared to be well taught. Still, cases are to be found where the teachers do not sufficiently, and in the right way, train their pupils in *reading* their spelling-lessons, before requiring them to be studied.

Drawing is making good progress in these schools. Where it is taught only tolerably well, the pupils are fond of it; and where it is well taught, they like it extremely well.

PENMANSHIP IN GRAMMAR SCHOOLS.

This very useful branch of instruction does not seem to me to be in an entirely satisfactory condition. Not that it is neglected; on the contrary, much attention is bestowed upon it. Not that the teachers are lacking in skill in teaching it. Many of our teachers conduct writing exercises very skilfully and efficiently. The work is carried on very systematically and carefully. Much attention is given to the training of pupils to sit in the proper positions, and hold the pen correctly. The pupils are taught in classes by the use of the blackboard,—the best plan yet thought

of for saving time in teaching writing. And yet, after all due credit is allowed to teachers for the skill and zeal they put into the teaching of writing, the fact remains that the results, taken as a whole, are not what they should be. This is at least my opinion. And yet I would not speak too sweepingly and without due discrimination. I ought to say that the results in some schools are much more satisfactory than in others.

I do not find fault with the teachers for not taking pains with the writing of their pupils. The fault seems to lie in a misdirection of efforts. This misdirection of efforts on the part of the teachers is found, in the first place, as it appears to me, in the expenditure of much labor in trying to make young children write with a free hand before they have been trained to form the letters with a good degree of exactness. The attempt to teach children to write freely at the beginning of their course of instruction in this branch is like trying to teach a child to dance before it can stand alone. In the first steps in writing, the free and uncramped use of the muscles of the *hand and fingers*, in forming the twenty-six letters of the alphabet with beauty and precision, should be the aim, rather than the free use of the muscles of the *forearm and shoulder* in rapid movements. After children have been taught to form the letters well, and readily join them in words, in connection with a good training of the muscles of the hand, they may, with profit and success, be taught in a comparatively short time to combine the finger and hand movement with the forearm movement, with a view to produce greater speed and freedom in writing.

In the second place, the teaching in this branch is misdirected in respect to the *character* of the writing taught. A corrupt taste in regard to writing has been for several years gradually creeping into our schools. Some of the more conservative teachers held out long against the influences which have been at work to bring about this change in the style of writing, and there may be a few who still hold out against this bad innovation. The corruption to which I refer consists in the substitution of a slender, faint and weak kind of writing, with certain outlandish and fanciful capitals, for a good, honest, plain, neat, firm, clear, legible, strong and regular hand. Some enthusiastic admirers of this modern fashion in writing are ready with their handsome specimens with which to prove the excellence of its results. But specimens culled from an upper class prove nothing in any branch of instruction, except that there are some pupils who have superior talent. I know that in the highest class of our Grammar Schools many *pretty* specimens of writing can be found. But are they specimens that would look well in the books of the Register of Deeds, or in the records of the City Clerk, or in a merchant's account books, or in a business letter, or anywhere else except in the album of a very young lady? Of course there are exceptions. I do not mean to say that all our writing has come to this, thanks to conservatism; and I am glad to have this chance to commend conservatism, for holding fast to what is good, since I have so often had occasion to blame it for upholding abuses and absurdities. But selected specimens are by no means useless.

They may be very useful as standards to aim at, if they are really good productions. I wish every school would have framed and hung up a specimen of what it calls its best productions in the way of practical writing. In this way we should see at a glance what it is *aiming* at.

I not only reject the *specimen* test as evidence of what a whole school is doing, but I also reject the *class* test, if that class is the upper one. I know there are those who will say, "If the first class is right, all the lower classes must be right." But this proposition needs much qualification. Until all the pupils, or a very large majority, come up in their turn to the first class, it must be taken with much allowance. The true test of the writing in our schools would be to send, on a given morning, to every school, of whatever grade, a paper for every pupil, on which a specimen of practical writing is required to be written immediately, without any opportunity for rewriting, or for special practice with reference to its performance.

Fifty or sixty years ago, the fault in teaching writing was in the direction precisely opposite to that in which we find the fault of the present day. Then the young pupils were required to write too large letters, and were kept too long upon "pot-hooks and tram-mels," practical exercises and training in free movements being almost wholly ignored in the lower classes. Now we begin with minute hair-line letters and free movement, or attempts to produce free movement. Both these extremes should be avoided. All extremes in education are to be deprecated. If

children must *begin* with writing small hand, they should not end with it. Somewhere in their course they should be taught a large, round hand.

Our hair-line writing demands fine pens, and so our children are educated to the use of the 303 Gil-lott pen, which they will find it necessary to give up when they are done with writing fine copies to be seen, and come to practical writing; and the transition will cost them no little trouble.

From the time children in the Primary School begin to write script letters up to the middle of the Grammar-School course, at least, *but one single form and style of letters, small and capital, should be allowed, either in the copy writing or in practical writing exercises.* This simple rule, strictly adhered to in all our schools, would soon produce the most beneficial results, and save teachers and pupils much valuable time.

Why will teachers of the lower classes persist, as not a few still do, in requiring their pupils to write spelling and other exercises *rapidly*, and, of course, carelessly? In this way they are undoing, to a great extent, what they do so laboriously in giving the writing lessons, forgetting that practice does *not* make perfect, unless the practice is of the right sort. The model letters should be before the child's eye, on the blackboard or on a chart, and he should always be held strictly to its imitation, and be given time to do it. And here let me put in an earnest plea for the slow children. They will be found in every class. It is unwise and cruel to try to force them to keep pace with their swift companions.

If the High Schools are not expected to occupy themselves much with the improvement of the penmanship of their pupils, they ought at least to keep it from deteriorating. But this duty I fear they do not always fulfil. The amount of rapid writing required in some of these schools soon renders the pupils careless of their penmanship, and thus much of the hard work done in the Grammar Schools to secure handsome writing is wasted.

HYGIENE AGAIN.

This important topic was touched upon, in my last report, in respect to one of its phases. I spoke only of some of the school practices and arrangements as affecting the health of pupils. Parents were very generally gratified with what I said, because I criticised the schools, but teachers probably thought me somewhat unjust, because I did not also criticise the home life and habits of children as affecting their health. But it would be a mistake to suppose that I intended to throw upon teachers all the responsibility in respect to the physical well-being of our school children. Nothing was farther from my intention. If the physical treatment of children at home were what it should be, the teachers' tasks would be greatly lightened, and their labors would be rendered far more successful. But I hold that inasmuch as the physical treatment of children at home is very far from being what it should be, there is so much the more need of giving them judicious physical treatment at school. And, besides, until better hygienic ideas and practices are taught in the

schools we cannot expect a general reform of the homes in hygienic matters. Hygienic reforms in the homes must be wrought out through the agency of schools. Parents are ignorant of hygienic laws, and through their ignorance suffer their children to indulge in practices injurious to their health, because they themselves were not properly taught in respect to these matters while they were pupils. But the present generation of teachers and school officials is not responsible for the ignorance and consequent faults of the parents who did not come under their tuition.

Parents often do great injustice to the teachers and the whole school system by charging upon them the ill-health of their children, which is really due to home causes. The school is the most convenient scapegoat for the physical sins of the home; and, on the other hand, teachers are often too ready to attribute the ill-health of their children wholly to mismanagement at home, when their own mismanagement has had a share at least in producing it.

The regulations of the school prescribed by the Board with a view to protect and promote the health of pupils are very good, but they are too often disregarded, and disregarded with impunity, because there is no adequate provision for enforcing them. The regulation in regard to detaining pupils after the close of the school session is an example. It is very carefully worded. It is intended to give to teachers some discretion in the matter. It presumes them to be honest and judicious. This is its language: "Teachers may judiciously exercise the

right to detain a pupil for a reasonable time after the regular hour for dismissing school, either for purposes of discipline or to make up neglected lessons." Is it not plain that the Board by this rule means to forbid the keeping of a child after school except for misconduct or a deficiency in lessons which is the result of neglect, that is, wilful idleness? And yet teachers, with this rule before their eyes, have been, *and are now*, in the habit of keeping pupils daily after the time for dismissal, from half an hour to an hour and upwards, for no fault of the pupils whatever. Perhaps they have missed the spelling of a word, or a date in history, or a question in geography, or they have not had time to do their sums, and so they are kept an hour, more or less, in an excited or exhausted state, after a mental strain of a three hours' session. When released they rush home, swallow a hasty dinner, and rush back again, to go through the same experience in the afternoon. I do not mean to say that such practices are universal, or even general. I hope that few teachers thus violate the spirit of this wise and plain regulation. But as long as any are found so ignorant or so regardless of the requirements of the health of pupils, ought the parents of the children thus improperly detained to be expected to acquiesce in silence?

It has been suggested that this evil might be remedied by making a rule absolutely prohibiting the keeping of a pupil after the time prescribed for dismissal. But it does not seem to me that it would be best to apply such a remedy; for in these days,

when it is justly deemed desirable to dispense, as far as practicable, with corporal punishment, the right of the teacher occasionally to keep a pupil after school, for misconduct or wilful idleness, seems to be desirable and necessary. There are also strong objections to the plan of fixing a limit to the time of keeping a pupil after school. If the time is very short, it will be ineffectual, and no one would think of making it long, or even moderately long. District Committees could easily put an end to the violation of this rule by requiring reports from teachers of their cases of detention, along with their cases of corporal punishment.

The masters of the districts should be strictly held responsible for the hygienic management of the pupils under their charge. They are supposed to have the requisite knowledge for attending to this matter, and they are sufficiently released from class instruction to afford them time to supervise and direct their assistants, where supervision and direction are needed, in the discharge of all their duties. And yet there may be some question as to whether this business is as yet attended to, in all cases, with sufficient thoroughness. Perhaps our teachers in general would not be willing to admit that their education in regard to school hygiene is not quite what it should be. It is probable, however, that those who know the most about it would be the readiest to own their ignorance, and are taking the most pains to become better acquainted with the subject. When I hear a teacher speak lightly of this matter, and treat it as of little importance, and stigmatize the remonstrances

of intelligent parents against school practices injurious to health, as meddlesome impertinences, I feel pretty certain that that teacher is not yet so wise as to need no farther acquisition of knowledge.

Through defects of school architecture, although ours is comparatively so excellent, and the ignorance of parents and teachers, scores and probably hundreds of our school children are constantly doing injury to their eyesight. In my report for September, 1869, I briefly called attention to this topic, and referred to a valuable paper on the subject, by Dr. Henry W. Williams. This distinguished oculist has rendered still further service to the cause of school hygiene, by the translation and publication of a paper on the "Causes and Prevention of Near-sightedness," by Dr. Kampf, an Austrian surgeon of high authority. The following paragraphs from this translation will make it plain, I think, that educators ought to understand something about the means of preventing the eyes of school children and students from receiving injury from injudicious use:—

"The researches, prosecuted with great industry and untiring perseverance, by Dr. Cohn, of Breslau, upon the refractive condition of the eyes of 10,000 school children, have led to this noteworthy result: That, in all classes from the lower schools up to the university, there was a great proportion of near-sighted pupils; and, furthermore, that this anomalous condition was met with more frequently in the city than in the country schools, and in the higher more than in the lower classes. This general result appears little surprising; but the detailed statements

respecting the percentage of the same classes, showing the enormous increase of the defects as they reach the higher schools, may well excite astonishment.

"The village schools show but 1.4 per cent. of near-sighted children, the primary town schools 6.6 per cent., the intermediate schools 10.3 per cent.; in the higher schools the proportion reaches 21 per cent., while in the university it is 40 per cent., almost one-half the whole number of students. From these reliable, carefully-elaborated data, the following conclusions necessarily follow:—

"1. That nearly the same proportion of near-sightedness will be found among all highly-educated people.

"2. That the number of near-sighted persons must increase in rapid proportion with the raising of the standard of scientific cultivation.

"3. That with the presumptive increase of culture in the future, we are on the direct road to become a generation of short-sighted people; *unless, knowing these facts, we resolve to take measures whereby the tendency to excessive increase of learning, augmenting these defects of refraction to a hazardous degree, may meet with energetic opposition.*"

The inducing causes, leading to acquired, or to the increase of congenital near-sight, are originated, says Dr. Kampf:—

"1. By bringing objects too near during continuous use of the eyes.

"2. By insufficient light.

"3. By unsuitable use of spectacles.

"4. By opacities of the transparent media.

"To counteract these injurious influences must, therefore, be the basis of preventive treatment. The principal cause of near-sightedness is found in the too near approximation of objects while the eyes are employed upon small things, and *insufficiency of light* necessitates the bringing of objects near the eyes, thus calling forth the whole series of morbid phenomena. The means of preventing near-sightedness must consist chiefly in averting the mischievous effect of its exciting causes, by combating them in the family and the school.

"We must, first of all, endeavor to make these important matters as clear as possible to the comprehension of the mass of the people by means of widely circulated popular articles, in which the injurious influences to which the eyes are exposed during the juvenile period should be described in detail. In every family, preservative rules should be watchfully observed, in order that clear vision may be retained. It should be understood that *a bent position of the head in study is hurtful*.

"Special vigilance and attention should be exercised with regard to the children of the common schools, as well as those who are to be sent to the higher schools. The plans, the site, the lighting of the school-houses, must be adjusted to meet the requirements of modern knowledge. The relatively too great height of the desks, and the imperfect lighting of our school-rooms, are great evils, because they lead to the bringing of objects too near the eyes,

and thus involve the inordinate exercise of the accommodative power.

"A school-room should be in a brightly-lighted situation, and should have ample window spaces. The pupils should occupy seats with desks of less than 45° of inclination, placed at a distance of ten or twelve inches from the eyes. The hours of study should be suitably regulated, and the injurious overburdening with home lessons diminished. Pale ink, bad type, too fine or too closely printed characters, too fine pens, too dark paper, — in short, all those agencies which exert hurtful influences, by creating a strain upon the eyes, should be done away with."

The new modification of our school architecture, whereby many of the school-rooms are provided with windows only on one side, demands careful consideration with reference to its effect on the eyesight of pupils. The danger is that the light will be insufficient, especially on cloudy days.

MORALS AND MANNERS.

These two subjects of instruction are very properly connected together in the programmes of our schools. They are required to be taught orally, without the use of any prescribed text-books, "by anecdotes, examples and precepts, and by amplifying and applying the hints and suggestions relating to these topics contained in the reading lessons." Everybody admits the desirableness of making these matters subjects of instruction in school education, and yet, practically, they are too much neglected in all our schools. Teachers sometimes give, as their

excuse for this neglect, that they receive no credit for their labors in this direction, the progress of their pupils in their studies being the main object of inquiry by their committees. Many teachers, however, do, I am sure, most conscientiously exert themselves to train their pupils to good morals and good manners, and if these labors do not tell to their credit in the percentage of scholarship, they are certainly set down to their account in the heavenly record of good works. But if such a reward does not afford motive enough for fidelity in this useful service, it may be suggested that this kind of work "pays" in the mere selfish and worldly point of view, or, perhaps, it would be more correct to say that it would pay, if it were possible for this sort of training to be done effectively for merely selfish ends. But I would put the matter in this way: Suppose a teacher to say to himself, "I get no credit for training my pupils in good morals and manners, but I cannot be a true teacher if I neglect this duty, and so I will do this duty even if I am not rewarded for it." And he acts accordingly. The result will be that he will not only confer a great benefit upon his pupils in the cultivation of their moral sentiments and in training them to good behavior, but he will at the same time accomplish more for them intellectually, and with less wear and tear to himself, than he would have accomplished by devoting himself exclusively to their intellectual training. And thus indirectly he gets credit for the good work, which he had resolved to do solely from a sense of duty. During the past year, Mr. Bates, master of the Brimmer School,

read a valuable paper before the masters' meeting, in which he explained in detail the method by which he had for years systematically and effectively trained the pupils of his school in good morals, manners and habits. I hope other masters of long experience will follow his example in giving to the younger teachers the benefit of their experience in this important department of education. I have often observed with much interest the effect of the teacher's manners, good or otherwise, upon the discipline of his pupils. Their pupils being of the same description to begin with, teachers will find it necessary to resort to coercive means of discipline to an extent somewhat in an inverse ratio to the extent of their own advancement in good-breeding.

THE VIENNA EXHIBITION.

The International Exhibition to be held at Vienna, Austria, in the year 1873, commencing on the 1st of May, and closing on the 31st of October in that year, has for its aim to represent the present state of modern civilization, and the entire sphere of national economy, and to promote its further development and progress.

In view of the fact now fully recognized by the most enlightened minds, that EDUCATION lies at the foundation of material and social well-being, the manager of the Exposition, in classifying the objects to be exhibited, has assigned a very important place to *group twenty-six*, comprising "EDUCATION, TEACHING AND INSTRUCTION."

In regard to this department, Gen. Van Buren, the

American Commissioner to the Exhibition, says: "No more important subject than that of *education* will be brought before the great World's Congress, which will assemble at Vienna; and the earnest desire, repeated in nearly all the communications received from the chief manager, to have our educational system thoroughly represented, seems to me to afford us an opportunity not to be neglected." The Hon. John Jay, U. S. Minister to Vienna, has urged very strongly the desirableness and utility of securing a complete representation of the education of this country, not only by sending apparatus and statistics, but by delegating persons to explain them, and to bring home the results of their examination of foreign systems.

Gen. John Eaton, Jr., U. S. Commissioner of Education, having been appointed to take charge of the arrangements for the accomplishment of this object, appealed to educational authorities throughout the country to co-operate in securing the desired representation. He was especially anxious that this city should take a share in this work proportionate to its educational prominence and reputation. To carry out the plan proposed for this purpose, it was found that a considerable sum of money would be required, but the City Solicitor decided that the city could not legally vote money to defray the expense of procuring objects for the Exhibition. The special committee of the Board appointed to take charge of the representation, then concluded to ask the Board to loan samples of apparatus and books belonging to the city, for the purpose of making up a contribution.

This request being readily granted, steps were immediately taken to make as good a collection as possible, under the circumstances. As soon as it was understood that a contribution would certainly be sent, the manufacturers of school furniture and apparatus, as well as publishers, came forward most generously with the free offer of their productions. The result is that a considerable collection has been forwarded. If it is not what it would have been if the requisite funds could have been obtained, it is hoped that it will at least do no discredit to us. In some of its items we could not desire anything better. We have met with discouragement in this undertaking from two classes of persons. The one does not think we have anything in the way of education worthy to be exhibited; and the other, standing at the opposite pole, thinks that we are so perfect in our educational management that we have nothing to learn from foreign countries. But we are glad to acknowledge the warmest encouragement and aid from those who belong to that wiser class that thinks we have some things to be proud of, while we have also other things that need to be improved.

The following, from the "Boston Daily Globe," is a correct general statement of the contents of the contribution: —

"The contribution of the city of Boston to group twenty-six at the Exposition, which comprises 'education, teaching and instruction,' has just been shipped by Adams' express to the Brooklyn Navy Yard, to be put on board the United States vessel bound for Trieste. Some idea of the bulk of the articles forwarded may

be obtained from the fact, that two thousand feet of lumber were used in making the thirty boxes in which they were packed.

“The aim in making up the collection was to represent, as fully as possible, the school architecture of the city, the school fittings, furnishings, apparatus, books, maps, charts, globes, and every description of appliances which are found in our best equipped schools of the different grades, from the lowest classes of our primaries up to the highest classes of our high schools, and also to present a fair specimen of scholars’ work in all the grades, as far as is practicable to show it on paper, by pen and pencil; completing the whole by sets of reports and documents, giving full information as to the history, organization, administration, methods of instruction, regulations and present condition of the city system of public instruction. Although the time has been short since the preparation began, by the means of the efficient assistance which has been rendered to the special committee of the School Board appointed for the purpose, and to the superintendent, they have been enabled to make the collection more complete and valuable than had been anticipated.

“In the department of school furniture, the representation is all that could be desired. When it is said that it is the best quality produced at the well-known establishment of Joseph L. Ross, of this city, the oldest manufacturer of school furniture in America, nothing further need be added in regard to its quality. In the list of the lot sent are found eleven sizes and styles of scholars’ desks and chairs, the most approved drawing-desk and chair, teachers’ tables and desks, a sample of settees, three book-cases, and a large case for philosophical apparatus. The most important item in the list of apparatus sent is that of an excellent set such as is used in our grammar schools, for the illustration of natural philosophy, from the manufactory of the Messrs. Chamberlin of this city. Under the head of general apparatus are comprised writing-tablets, by Payson & Dunton; Philbrick’s primary school-tablets; Leigh’s phonic charts; Guyot’s Cornell’s and Warren’s large and small mural maps; historical charts; Luther W. Mason’s music charts; Cutter’s charts of physiology; Prang’s merit cards; terrestrial and celestial globes of different sizes and of the first quality, from the manufactory of Gilman Joslin, of this

city; chart and music stands, tablet-box, object stand and box, numeral frame, mathematical instrument case, box of object-blocks, different kinds of blackboard rubbers, drawing-boards.

“The catalogue of books sent embraces all the text-books and books of reference used in the schools, with the exception of the reference books used in the high schools, the whole number of volumes amounting to about five hundred. Books of reference used in the grammar schools, bound in handsome style, are sufficient to fill a good-sized book-case. The text-books used in all the grades of the schools number one hundred and twenty, the greater number belonging to the several high schools. Among the other articles sent are a complete set of the reports of the school committee of Boston, in sixteen handsome volumes, the rules and regulations of the schools, the report of the committee on accounts, and a package of the last report of the committee on music. With these documents were sent, also, the State contribution, comprising a complete set of the reports of the State Board of Education, in twenty-two volumes, and a complete set of the annual reports of the school committees of all the cities and towns of the Commonwealth of Massachusetts, for the year 1872, arranged alphabetically, and bound in eleven volumes, and a bound volume of the documents of the Massachusetts Institute of Technology.

“The scholars' work embraces eight large volumes of drawings and nine volumes of written exercises of different descriptions. A large portfolio, 36×30 inches, of the best drawings by pupils of the day schools and evening industrial drawing schools, selected from the productions presented at the annual exhibition of drawing. School architecture is represented by forty-two photographs mounted on board, 24×20 inches, bound in two portfolios. The list of school-houses, represented are the Girls' High, Dorchester High, Roxbury High; the Tileston, Lyman, Sherwin, Shurtleff, Rice, Everett Grammar; Yeoman street, Clinch, Starr King, Cushman, and Appleton street Primary. With these were included, also, fine views of the City Hall, the Massachusetts Institute of Technology, and Police Stations 9 and 10.

“This valuable collection has been secured without the direct expenditure of a dollar by the city, as the City Solicitor decided that no appropriation could be legally made by

the City Council for this purpose. The articles that have not been loaned for this purpose by the school committee, to be transported to the Exposition and back again by the general government, have been presented by manufacturers and publishers, or paid for by private contributions. The expenses of producing photographs of school-houses were paid by Alderman Gaffield. The Mayor generously offered the superintendent one hundred dollars, as his personal contribution, to defray expenses not otherwise provided for."

PERSONAL.

I desire to tender to the Board my most grateful acknowledgments for their courtesy and kind consideration in granting me an extended vacation, to enable me to attend the Vienna exhibition, and especially for the cordiality and unanimity with which the act was done. It is my purpose to spare no pains to render my foreign visit profitable to the interests of education at home. A pleasure excursion is not what I am contemplating, but a laborious journey rather. Although the Exhibition furnishes the occasion of my going, it is by no means the sole object of my voyage. It is my intention to make a tour of educational observation and inquiry through the principal countries of Europe, with a view to obtain useful information for the improvement of our own institutions of learning.

Respectfully submitted,

JOHN D. PHILBRICK,
Superintendent of Public Schools.

March, 1873.

TWENTY-SEVENTH SEMI-ANNUAL REPORT.

To the School Committee of Boston:

GENTLEMEN, — In conformity with the requirements of your regulations, I respectfully submit the following as my Thirty-ninth Report, the Twenty-seventh of the semi-annual series.

SUMMARY OF STATISTICS.

FOR THE SCHOOL YEAR ENDING AUGUST 31, 1873.

I. POPULATION.

Population of the city, U. S. Census, 1870 . . .	250,701
Number of persons in the city between five and fifteen years of age, May 1, 1873 . . .	48,001
Increase for the year . . .	1,857

II. SCHOOLS.

Number of districts into which the schools are grouped for supervision . . .	36
Number of High Schools . . .	6
Latin School, for boys.	
English High School, for boys.	
Girls' High and Normal School, for girls.	
Normal School, for girls.	
Highlands High School, for boys and girls.	
Dorchester High School, for boys and girls.	

Number of Grammar Schools	37
For boys, 10 ; for girls, 10 ; for boys and girls, 17.	
Number of Primary Schools for boys and girls .	340
Increase for the year	5
Number of schools for Licensed Minors . . .	2
School for Deaf-Mutes	1
Kindergarten School	1
Whole number of Day Schools	387
Increase for the year	6
Number of Evening Schools	11
“ “ “ Drawing Schools	3
Whole number of day and evening schools . .	401
Increase for the year	9

III. SCHOOL-HOUSES.

Number of school-houses for High Schools . .	5
School-rooms, 45 ; class-rooms, 24 ; halls, 6 ; seats, 2,350.	
Number of school-houses for Grammar Schools .	37
School-rooms, 431 ; halls, 30 ; seats, 23,842 .	
Number of school-houses for Primary Schools be- longing to the city now occupied . . .	63
School-rooms, 335 ; seats, about 18,700.	
High School divisions in Primary School-house .	3
Grammar School divisions in Primary School- houses	18
Grammar School divisions in hired buildings .	1
Primary Schools in Grammar School-houses . .	28
Primary Schools in Ward-rooms	1
Primary Schools in hired buildings	16
Number of Ward-rooms in Grammar School-houses	2
Number of Ward-rooms in Primary School-houses	3

* Dorchester buildings reckoned as Grammar school-houses, with an average of 50 seats to a room ; the other buildings reckoned at 56 seats to a room.

IV. TEACHERS.

Number of teachers in High Schools	84
Male teachers, 43 ; female teachers, 41.	
Increase for the year	7
Number of teachers in Grammar Schools	491
Male teachers, 73 ; female teachers, 418.	
Increase for the year	4
Number of teachers in Primary Schools	341
Male teachers, 1 ; female teachers, 340.	
Increase for the year	5
Number of teachers in the schools for Licensed	
Minors, females	2
Number of teachers in Deaf-Mute School, females	5
Number of teachers in Kindergarten School, female	1
Number of teachers in Day Schools	924
Male teachers, 117 ; female teachers, 807.	
Increase for the year	18
Number of teachers in Evening Schools	115
Male teachers, 31 ; female teachers, 84.	
Number of teachers in Evening Drawing Schools	11
Male teachers, 10 ; female teachers, 1.	
Whole number of teachers	1,050
Male teachers, 158 ; female teachers, 892.	
Regular teachers, 1,011 ; special teachers, 39.	
Aggregate increase for the year	49

V. PUPILS.

Average whole number of pupils belonging to day	
schools of all grades during the year	35,930
Ratio of the number of pupils belonging to the	
schools to population of the city	.14
Ratio of the number of pupils belonging to the	
schools to school population	.75
Average daily attendance of pupils in all the day	
schools	33,143
Average daily absence of pupils in all the day	
schools	2,787

Average per cent. of attendance of all day schools	90.9
Average whole number of pupils belonging to the	
High Schools	1,745
Boys, 906 ; girls, 839.	
Average daily attendance at High Schools . . .	1,648
Per cent. of attendance at High Schools . . .	92.9
Average number of pupils to a regular teacher in	
High Schools	26.4
Average whole number of pupils belonging to	
Grammar Schools.	19,267
Boys, 10,116 ; girls, 9,151.	
Average daily attendance at Grammar Schools .	17,973
Per cent. of attendance at Grammar Schools . .	93.2
Average number of pupils to a regular teacher in	
Grammar Schools	41.3
Average whole number belonging to Primary Schools	14,790
Boys 8,201 ; girls, 6,589.	
Average daily attendance at Primary Schools .	13,418
Per cent. of attendance at Primary Schools . .	90.0
Average number of pupils to a regular teacher in	
Primary Schools	43.5
Average whole number belonging to the schools	
for Licensed Minors	57
Average daily attendance at schools for Licensed	
Minors	50
Average whole number belonging to School for	
Deaf-Mutes	48
Average whole number belonging to Kindergarten	
School	23
Average whole number belonging to Evening	
Schools	2,559
Average attendance at Evening Schools . . .	1,210
Average whole number belonging to Evening	
Drawing Schools	326
Aggregate whole number belonging to day and	
evening schools	40,017
Number of different pupils enrolled,—males	
24,196, females 21,095, total	42,195

VI. EXPENDITURES.

Salaries of Officers of School Committee and	
Truant Officers	\$23,649 65
Salaries of Teachers, High Schools	143,379 48
Grammar Schools }	758,899 59
Primary Schools }	
Licensed Minors' School	1,516 64
Deaf-Mute School	3,828 72
Evening Schools	21,578 00
Kindergarten School	650 00
Whole amount of salaries of teachers	929,852 41
Incidental expenses	338,970 85
By Com. on Public Buildings \$248,889 63	
By School Committee 90,081 22	
Whole amount of incidental expenses, including	
salaries of officers	362,620 50
Whole amount of current expenses for all the day	
and evening schools and salaries of officers	1,292,472 91
Expenditures for school-houses and lots	454,230 34
TOTAL EXPENDITURES FOR ALL SCHOOL PURPOSES	1,746,703 25
Cost per scholar based upon the average whole number belonging —	
For tuition,	
All day schools	25 04
For incidentals,	
All day schools	10 09
For both tuition and incidentals,	
All day schools	35 13
Whole amount appropriated by the City Council	
for salaries, and ordinary or current expenses	
of schools for the financial year <i>beginning</i>	
May 1, 1873	1,391,125 00
Distribution of the appropriation: —	
Salaries of officers \$24,500 00	
Salaries of teachers 1,024,875 00	
Incidentals, — Committee on Pub-	
lic Buildings 255,000 00	
Incidentals, — School Committee	86,750 00

Total amount of appropriations voted by the City Council for 1873-74	\$10,932,147 00
Amount assessed for State, County and City taxes for the financial year 1873-74.	8,638,092 00
Ratio of the amount appropriated for the <i>current</i> expenses of the Public Schools, to the total amount of appropriations of the city for the year 1872-73	.12+
Ratio of the amount appropriated for the <i>current</i> expenses of the Public Schools, to the whole amount to be raised by taxation for the year 1872-73	.16+
Valuation of the city, May, 1873	693,831,400 00
Per cent. of valuation of 1873, appropriated for Public Schools	.002
Valuation of the city, May, 1865	371,892,775 00
Per cent. of valuation of 1871 appropriated for Public Schools for the year 1871-72	.001-65
Average percentage of the valuation of 1871, the cities and towns of the State, appropriated for Public Schools, to be expended in the year 1871-72	.002-43
Amount received from the income of the State School Fund	8,290 19

It appears that in *the average whole number of pupils belonging* to all the day schools there has been a decrease, during the past year, of 304, which is owing, no doubt, to the prolonged prevalence of the small-pox, in some sections of the city. It was probably owing to the same cause that the average per cent. of attendance of the day schools fell off from 92.4 to 90.9. The average number belonging to the day schools was 14 per cent. of the whole population, or about 7 to 100, and 75 per cent. of the school population, or 3 to 4. But notwithstanding the fact that

there was a decrease during the year of the attendance of pupils, there was an aggregate increase of 49 teachers. The increase in the number of teachers during the past ten years has been quite out of proportion to the increase in the number of pupils. And this disproportionate increase of teachers has largely increased the average cost of tuition per pupil. The maximum number of pupils to a teacher, as prescribed by the regulations, is reasonably low, and in some cases, perhaps, too low, and yet the actual number falls far below the prescribed standard.

The increase in the amount of salaries of teachers during the last year was \$66,193.41. This was owing mainly to the addition of \$100 to the salary of the female teachers of the Primary and Grammar Schools. The lowest salary is now \$800 after two years' service. This rate of compensation ought to command better qualifications than are in all cases obtained. In order to secure to the schools the full benefit of the salaries paid to the teachers, a corresponding standard of qualifications for teaching ought to be adopted, and strictly adhered to.

The average cost per pupil for tuition was advanced last year from \$23.83 to \$25.04, an increase of \$1.21, and the cost for incidentals was advanced from \$9.74 to \$10.09, an increase of \$0.35 ; the aggregate increase per pupil being \$1.56.

PRIMARY SCHOOLS.

The attendance at these schools during the last half year, as compared with that of the corresponding six month of the preceding year, was as follows:—

The average whole number of pupils belonging was 14,732 against 14,199, the *increase* being 533; the average daily attendance was 13,461 against 12,814, showing an *increase* of 647; and the per cent. of attendance 90.9 against 89.8, the *increase* being one and one tenth per cent. The whole number belonging at the date of the closing of the schools in July was 15,533 against 14,610, the increase being 923.

The whole number of regular teachers belonging to this grade of schools at the end of the school year was 340 against 335 last year.

The classes at the end of the year were as follows:—

Classes.	No. Aug. 31, 1873.	Per cent.
First class	2,378	.15
Second class	2,317	.15
Third class	2,213	.14
Fourth class	2,318	.15
Fifth class	2,582	.17
Sixth class	3,725	.23

I desire to call special attention to the foregoing statement of the number of pupils in the several classes of the Primary Schools. It contains the most important information respecting the condition of these schools, that can be presented in one statistical view. The eye of the expert will at once perceive its significance. It shows how well the pupils are advanced from class to class. The point to be arrived at is to make the percentage in the three upper classes equal that of the three lower classes. I am sorry to say that, although the showing this year is

very good in this respect, it is not quite so good as it was last year. If any member should find time to read these dry facts about our schools, I beg to suggest to him to turn to the table in the Appendix, showing the details of the number of pupils in each class in the Primary Schools, and calculate the percentages of the classes of the districts under his own supervision. By doing this he will at once ascertain how they compare with the average percentages as presented above.

The ages of the pupils at the end of the school year were as follows:—

Ages.	No. Aug. 13, 1873.	Per cent.
Five years of age	2,542	.17
Six years of age	3,547	.23
Seven years of age	3,073	20
Eight years of age	3,033	.20
Nine years of age and over	2,708	.17

The ages of pupils, as well as their classification, ought to be carefully looked after. It appears that the number in the Primary Schools, nine years of age and over, was 2,708. It should be our aim to pass all pupils from the Primary to the Grammar Schools at eight years of age. This would be accomplished if they were entered at the Primary Schools at the proper age, and regularly advanced from class to class at the end of each half year. It is gratifying to find, by a reference to the statistics of former years, that the number of pupils of over age has diminished rather than increased.

The following table shows the number of primary pupils in each district, and the *average number of pupils to a school, or teacher, during the last half year*: —

DISTRICTS.	No. of Schools.	Whole Number.	No. to a School.	DISTRICTS.	No. of Schools.	Whole Number.	No. to a School.
Adams	9	415	46.1	Lewis	10	477	47.7
Bigelow	13	571	43.9	Lincoln.....	11	585	53.1
Bowditch...	8	253	31.6	Lyman	8	352	44.0
Bowdoin ...	11	387	35.2	Mayhew	7	253	36.1
Boylston ...	6	282	47.0	Norcross....	14	630	45.0
Brimmer ...	12	417	34.7	Phillips	7	234	33.4
Chapman ...	10	447	44.7	Prescott	10	491	49.1
Comins.....	17	828	48.7	Quincy	10	359	35.9
Dearborn ..	18	846	47.0	Rice.....	13	559	43.0
Dorchester..	21	943	44.9	Sherwin	13	591	45.4
Dwight.....	6	300	50.0	Shurtleff....	14	683	48.8
Eliot.....	16	656	41.0	Washington .	8	305	38.1
Everett.....	10	534	53.4	Wells	12	493	41.1
Franklin ...	6	258	43.0	Winthrop ...	9	310	34.4
Hancock....	19	747	39.3				
Lawrence ..	12	526	43.8	Totals	340	14,732	43.3

It will be seen that the average number belonging to a school was 43.3. It would cost about \$50,000 a year less to carry on the Primary Schools, if the number of pupils to a teacher were kept up to the prescribed standard.

The following table shows the number of primary pupils in each district promoted to the Grammar Schools, July, 1873, and the average number of promotions to each school in the respective districts:—

DISTRICTS.	No. of Schools.	Sent to Gr. School.	No. to a School.	DISTRICTS.	No. of Schools.	Sent to Gr. School.	No. to a School.
Adams	9	53	5.8	Lewis	10	74	7.4
Bigelow	13	87	6.6	Lincoln	11	103	9.3
Bowditch	8	41	5.1	Lyman	8	62	7.7
Bowdoin	11	75	6.8	Mayhew	7	30	4.3
Boylston	6	40	6.6	Norcross	14	99	7.1
Brimmer	12	84	7.0	Phillips	7	34	4.8
Chapman	10	68	6.8	Prescott	10	67	6.7
Comins	17	112	6.5	Quincy	10	57	5.7
Dearborn	18	111	6.2	Rice	13	70	5.4
Dorchester	21	158	7.5	Sherwin	13	83	6.4
Dwight	6	54	9.0	Shurtleff	14	98	7.0
Eliot	16	93	5.7	Washington ..	8	59	7.3
Everett	10	83	8.3	Wells	12	88	7.1
Franklin	6	42	5.8	Winthrop	9	66	7.3
Hancock	19	90	4.7				
Lawrence	12	95	7.9	Total	340	2,276	6.7

It appears that in the above comparative table the Lincoln District leads, the Dwight and Everett following next. But the relative merit of districts in this respect does not depend upon the promotions of a single year. The tabulated results of eight or ten

presented in one view would afford the data for an interesting and useful comparison.

The whole number of pupils promoted to the Grammar Schools in July was 2,276; the number promoted January 31, was 2,097; the total for the year was 4,373, against 4,270 for the preceding year, the *increase* being 103.

GRAMMAR SCHOOLS.

The attendance at these schools during the last half year, as compared with that of the corresponding six months of the preceding year, was as follows: —

The average whole number of pupils belonging was 19,776 — boys, 10,422 and girls, 9,354 — against 19,914, the *decrease* being 138; the daily average attendance, 18,472 against 18,527, and the per cent. of attendance 93.4 against 92.8. The whole number of regular teachers in this department at the close of the last school year was 466; males, 68, females, 398. In addition to these there were twenty teachers of sewing, three teachers of music, six teachers of drawing, who divided their time between these schools and the High Schools, and for three months a special teacher of vocal culture.

The whole number of pupils on the register at the close of the year was 17,896 against 17,102 at the close of the preceding year, the *increase* being 774, while, as shown above, there was a decrease in the average whole number belonging. The marked difference between the average of the six months and the whole number on the register at the close of the year was doubtless due to the small-pox panic which pre-

ailed during the early part of the half year. When this panic was over, the children who had been withdrawn from school were again enrolled, thus carrying the number at the close of the year quite above the average for the half year.

The classification of the pupils at the close was as follows:—

Classes.	No. Aug. 31, 1873.	Per cent.
First class (highest)	1,243	.07
Second class	1,806	.10
Third class	2,526	.14
Fourth class	2,996	.17
Fifth class	4,181	.23
Sixth class	5,144	.29

Ages.	No. Aug. 31, 1873.	Per cent.
Under eight	83	.005
Eight years	981	.05
Nine years	1,966	.11
Ten years	2,872	.16
Eleven years	2,958	.16
Twelve years	3,144	.18
Thirteen years	2,632	.15
Fourteen years	1,828	.10
Fifteen years and over	1,434	.08

I wish every member of the committee and every master would carefully analyze the above figures, and try to discover their true significance. They are extremely important as showing the condition of our Grammar Schools. I confess that they do not look so well as I could wish. *There are too few pupils in the upper classes, and too many in the lower.* Taking the average of two or three years past, the number in

the first class is about 28 per cent. of the number admitted from the Primary Schools. This proportion is far from being satisfactory. Then the number in the sixth class is, on the other hand, too large. It will be seen that it is larger, by some 800, than the number of pupils admitted during the year from the Primary Schools. This means that 800 pupils were more than one year engaged upon the studies of the sixth class. Again, if we compare the classification by ages with the classification by proficiency, the result is not so satisfactory as could be desired. The number in the two lower classes exceeds by upwards of 600 the whole number of pupils eleven years old and under. More than half of all the pupils in the Grammar Schools are found in the two lowest classes. *This showing ought to be radically changed.* A comparative table in the Appendix shows how each individual school stands in this respect. There it will be seen that while in some schools the sixth class is less than twice as large as the first, in others it is *six times* as large. Other things being equal, that school shows the best management which has the least difference between the numbers of pupils in the several classes. Our aim should be to carry all the pupils through the entire course, but we fall far short of that desirable result. Even if we go down to the third class, we find that it contains only a little more than half the number of pupils admitted in a single year from the Primary Schools. This shows that only about half the pupils ever reach this class. Certainly this fact cannot be contemplated with satisfaction. The cause of this unsatisfactory state of things is found, in part,

in the unwillingness or inability of parents to allow their children to remain long enough at school. But this cause equally affects all schools, which are alike in respect to the social condition of the population from which their pupils are drawn. And yet schools similarly situated in respect to population differ widely in regard to the proportion of pupils in the lower classes. And the reason evidently is that the management is different. And this management differs in two respects: First, in respect to the handling of the studies, and, second, in respect to the mode of making promotions. When the pupils are taught with a fair degree of skill, in accordance with the letter and spirit of the programme, and promoted, in the main, by classes, they are found in their proper classes.

I am aware that the classification as reported is not yet in exact accordance with the programme, that is, pupils reported as being in the first or second class are not in all cases fully up to the requirements of the class in which they are reported. And so of other classes. But the classification is now more uniform than it was three or four years ago. It is earnestly hoped that another year will show a larger proportion of pupils in the upper classes as compared with the lower.

The following table shows the number of teachers and average whole number of pupils, and the average number of pupils to a teacher (not counting the master's head-assistant), in each Grammar School, for the half year ending July 31, 1873:—

SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.	SCHOOLS.	No. of Teachers.	Average No. of Pupils.	No. of Pupils to a Teacher.
Adams.....	12	486	44.4	Lawrence ..	18	899	52.9
Bigelow.....	20	942	49.5	Lewis.....	14	649	49.9
Bowditch....	13	421	35.1	Lincoln	18	834	49.1
Bowdoin.....	11	481	48.1	Lyman	14	615	47.3
Boylston....	11	403	40.3	Mayhew.....	12	483	39.3
Brimmer....	15	608	43.4	Norcross....	15	738	52.7
Chapman....	12	476	43.2	Phillips	13	558	46.5
Comins.....	19	892	49.5	Prescott....	14	646	49.7
Dearborn....	17	800	50.0	Quincy.....	12	522	47.4
Dorch'r Dist.	38	1187	38.3	Rice	15	666	47.5
Dudley.....	7	258	43.0	Sherwin....	19	844	46.9
Dwight.....	14	584	44.8	Shurtleff....	14	719	53.3
Eliot.....	16	670	40.6	Washington	7	283	47.1
Everett.....	15	677	48.3	Wells.....	11	419	41.9
Franklin....	15	682	48.7	Winthrop...	17	721	45.1
Hancock....	18	662	36.6	Totals.....	466	19,776	46.1

It appears that the Shurtleff School leads in respect to the number of pupils to a teacher. If all the Grammar Schools had kept equally near the standard number of pupils to a teacher, the saving to the city would

have been upwards of \$75,000 during the year,—a sum about equal to that which was required last year to pay for the addition of \$100 to the salary of the Primary teachers and of the assistants in the Grammar Schools. In my judgment, the least justifiable expenditure of money for our schools is that large sum which is annually paid in consequence of the increase of the number of teachers in the Primary and Grammar Schools out of proportion to the increase of the number of pupils. Teachers who are weak in discipline and weak in instruction are very likely to attribute their want of success to the excessive number of pupils which they are required to govern and teach. But there is abundant, overwhelming evidence from experience during the last twenty-five years in our schools to prove that, with our excellent classification and accommodations, a teacher of fair capacity can satisfactorily handle from fifty to fifty-six pupils of the Primary or Grammar School grade. I believe that the pupils in the Shurtleff School are as well taught and as far advanced in their studies as they are in those schools where the average number of pupils to a teacher is nearly twenty less; and I never heard that the teachers of that school ever complained of an excessive number of pupils in their classes. The work required of teachers should not, it seems to me, be graduated to the capacity of the weak ones, but to the capacity of those who possess a fair degree of strength.

The following table shows the number of scholars who received the diploma of graduation, at the close of the schools for the year, in July, 1873, in each Grammar School:—

SCHOOLS.	Boys.	Girls.	Total.	SCHOOLS.	Boys.	Girls.	Total.
Adams	14	6	20	Lewis.....	14	27	41
Bigelow	34	..	34	Lincoln	21	27	48
Bowditch	..	30	30	Lyman.....	18	5	23
Bowdoin	..	29	29	Mather	5	12	17
Boylston.....	10	10	20	Mayhew	10	..	10
Brimmer	44	..	44	Minot.....	10	6	16
Chapman	12	19	31	Norcross	..	48	48
Comins	28	17	45	Phillips	14	..	14
Dearborn	11	15	26	Prescott.....	18	22	40
Dudley	..	22	22	Quincy	24	..	24
Dwight	32	..	32	Rice	31	..	31
Eliot	28	..	28	Sherwin	15	17	32
Everett	..	38	38	Shurtleff.....	..	38	38
Everett, Dor...	6	6	12	Stoughton....	4	11	15
Franklin	..	34	34	Tileston.....	6	4	10
Gibson	1	1	2	Washington ..	11	..	11
Harris	6	12	18	Wells.....	..	25	25
Hancock.....	..	17	17	Winthrop	..	35	35
Lawrence	44	..	44	Totals.....	471	533	1004

The whole number of diplomas awarded was 1,004 against 949 for the preceding year, showing a gain of

55. The gain on the part of the boys was only two, while the gain on the part of the girls was 53.

HIGH SCHOOLS.

The average whole number of pupils belonging to these schools during the last half year was 1,687 — boys, 874, and girls, 813 — against 1,557 for the corresponding six months of the preceding year; the average daily attendance was 1,590, and the average per cent. of attendance was 91.8. The number of regular teachers was 71; males, 32, and females, 39. Besides these there were 14 special teachers of military drill, drawing, music, French and German.

The following table shows the number of regular teachers, the average number of pupils, and the average number of pupils to a regular teacher, in each of the High Schools, during the half-year ending July 31, 1873:—

SCHOOLS.	No. of Reg. Teachers.	Average No. of pupils.	Average No. of pupils to a Reg. Teacher
Latin.....	10	190	19.0
English High.....	18	538	29.9
Girls' High and Normal	26	582	22.4
Normal.....	5	61	12.2
Roxbury High.....	7	196	28.0
Dorchester High.....	5	120	24.0
Totals.....	71	1,687	23.7

The average number of pupils to a teacher in the High Schools was 23.7. By the regulations it is pro-

vided that in the several High Schools the standard number of pupils to a teacher shall be as follows: Latin School, 30, English High School, 35, Girls' High School, 30, Dorchester High School, 30, the Roxbury High School and the Normal School being without any provision respecting this matter. The actual cost of the tuition in all these schools during the past year was about \$25,000 more than it would have been if there had been no more teachers employed than would have been necessary to meet the requirements of the regulations.

The following table shows the classification of the High Schools at the close of the school year: —

SCHOOLS.	Advanced.	CLASSES.						
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Totals.
Latin .....	.....	22	23	24	6	62	54	169
English High	12	103	145	249	.....	.....	.....	509
Girls' High	17	122	179	239	.....	.....	.....	557
Normal .....	.....	66	.....	.....	.....	.....	.....	66
Roxbury High.....	7	54	60	58	.....	.....	.....	179
Dorchester High ..	20	44	35	32	.....	.....	.....	131
Totals	56	411	442	602	6	62	54	1,633
Percentage	.03-5	.24-9	.27-4	.37-4	.00-4	.03-8	.03-4	.....

In my report last year I remarked that there was a very good proportion of High School pupils in the first and advanced classes, but it is still better this year.

The following table shows the attendance during the last *year*:—

	Boys.	Girls.	Total.
Average whole number.....	906	839	1,745
Average attendance.....	869	779	1,648
Per cent. attendance.....	....	....	92.9

The following table shows the number of scholars who received the diploma of graduation at the close of the school year, in each of the High Schools:—

SCHOOLS.	Boys.	Girls.	Total.
Latin	22	..	22
English High.....	100	..	100
Girls' High { Regular course.....	..	107	107
{ Regular and extra.....	..	10	10
Normal	..	54	54
Roxbury High	26	29	55
Dorchester High.	16	25	41
Total.....	164	225	389

The following table shows the number of pupils admitted at the July and September examinations, and the number of those who actually joined the High Schools, exclusive of the Normal School: —

	Boys.	Girls.	Total.
Admitted.....	420	378	798
Joined	352	322	674
Difference.....	68	56	124

The number of pupils admitted was 166 less than that of the preceding year, and the number of those who actually joined was 73 less.

Of the whole number admitted 696 came from the Grammar Schools, this number being 308 less than that of the graduates of those schools.

LATIN SCHOOL.

The average whole number of pupils belonging during the last half-year was 190 against 191 for the corresponding six months of preceding year; the average daily attendance was 178, and the per cent. of attendance was 93. These pupils were taught by one head-master, nine masters, and four special teachers, namely, one for the French language, one for music, one for drawing, and one for military drill.

The following table shows the number and average age of boys admitted to the Latin School from each Grammar School, and also the number admitted from

other sources, during the year ending September, 1873:—

BOYS' AND MIXED SCHOOLS, ROXBURY AND DORCHESTER EXCLUDED.	No. Admitted.	Average Age.	BOYS' AND MIXED SCHOOLS, ROXBURY AND DORCHESTER EXCLUDED.	No. Admitted.	Average Age.
Bigelow	1	13.75	Lyman	1	14.2
Brimmer	4	13.97	Mayhew .....	..	.....
Comins .....	..	.....	Phillips.....	2	12.87
Dwight	4	14.37	Prescott	6	14.47
Eliot	1	15.33	Quincy	1	14.66
Everett (Dor.)	4	12.52	Rice	9	13.77
Lawrence	3	13.44	Other sources	21	15.63
Lincoln	1	15.66	Totals	58	14.51

The ages of the boys admitted were as follows:—

Between ten and eleven, ...	1
Between eleven and twelve, ...	1
Between twelve and thirteen, ...	11
Between thirteen and fourteen, ...	15
Between fourteen and fifteen, ...	10
Between fifteen and sixteen, ...	8
Between sixteen and seventeen, ...	6
Over seventeen, ...	6

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I earnestly hope the Committee will restore the old conditions of admission to this school. If a boy is to study Latin and Greek, he should begin early. The conditions of admission are now such

that the average of the class last admitted was *fourteen and a half years*. This is *four years* beyond the proper time, according to the best educational authority and practice, for boys destined to a classical course to begin the study of Latin.

ENGLISH HIGH SCHOOL.

The average whole number belonging during the last half-year was 538, against 491 for the corresponding six months of the preceding year; the average daily attendance was 520, and the per cent. of attendance 96.5. These pupils have been taught by one head-master, five masters, twelve sub-masters, and five special teachers, namely, two for drawing, and one each for music, military drill, and the French language.

The following table shows the number and average age of the pupils admitted into the English High School, from Grammar Schools and from other sources, at the examination of candidates, July, 1873, and also how many actually joined the school at the beginning of the school year, September, 1873: —

SCHOOLS.	No. admitted.	No. joined	Average age.	SCHOOLS.	No. admitted.	No. joined.	Average age.
Adams	5	3	14.2	Lyman	12	7	15.1
Bigelow	25	19	14.9	Mayhew	4	4	14.6
Boylston	7	3	14.5	Phillips	21	18	14.6
Brimmer	34	30	14.9	Prescott	11	9	14.6½
Chapman	5	4	15.1½	Quincy	21	13	14.5
Dwight	25	22	15.2	Rice	30	27	14.5
Eliot	14	11	14.2	Latin	1	1	14.11
Lawrence	19	16	14.0	Other sources	25	25	15.1
Lincoln	18	14	15.5	Totals	277	226	14.9

Of those who were admitted, there were, —

Between twelve and thirteen years,	. .	13
Between thirteen and fourteen,	. .	57
Between fourteen and fifteen,	. .	99
Between fifteen and sixteen,	. .	80
Between sixteen and seventeen,	. .	23
Between seventeen and eighteen,	. .	5
		277

The average is the same as last year, and it is about one year higher than it should be. The Lawrence School stands the best in respect to age. The average age of the pupils from Dwight School is the highest. The average of the boys for the Phillips School is more than a year less than it was last year, while the number admitted is considerably larger. The Brimmer takes the lead in respect to number.

GIRLS' HIGH SCHOOL.

The average whole number of pupils belonging during the last half year was 582, against 558 for the corresponding six months of the preceding year ; the average attendance was 544, and the per cent. of attendance 93.6. These pupils were taught by one head-master, and twenty-five female teachers, of whom nineteen ranked as assistants, and six as head-assistants, and five special teachers, namely, two in drawing, and one each in music, and the French and German languages.

The following table shows the number and average age of the pupils admitted to the Girls' High and Normal School, from each Grammar School, and

from other sources, and also the number of those who joined the school and entered upon the course of study in the fall of 1873:—

SCHOOLS.	No. ad- mitted.	No. joined.	Average age admitted.	SCHOOLS.	No. ad- mitted.	No. joined.	Average age admitted.
			<i>y. m.</i>				<i>y. m.</i>
Adams.....	0	0	.....	Lewis	12	11	15.9
Bowditch ...	8	8	15.6 —	Lincoln.....	17	14	15.5
Bowdoin....	20	17	15.7 —	Lyman	5	3	15.7 +
Boylston....	1	1	14.2	Norcross....	13	8	15.9
Chapman ...	17	14	15.8 —	Prescott	10	8	15.7 —
Comins	3	3	15.11	Sherwin	5	2	15.4 +
Dearborn ...	5	3	15.9 —	Shurtleff....	28	21	15.6 +
Dudley	3	3	15.3 +	Wells	15	15	16. —
Everett	22	22	15.8 —	Winthrop ...	23	20	15.10—
Franklin....	25	24	16.2 +	Other sources	30	28	16.7 —
Hancock....	15	10	15.6	Roxbury High	1	1	14.10
Harris)Dor.)	2	2	15.4½	Totals	280	238	15.9 +

Of the candidates from the Grammar School there were:—

Between twelve and thirteen,		2
Between thirteen and fourteen,		28
Between fourteen and fifteen,		89
Between fifteen and sixteen,		122
Between sixteen and seventeen,		68
Between seventeen and eighteen,		25
Between eighteen and nineteen,		4
Over eighteen,		1

339

The printed Quarterly Report on this school for September sets forth briefly but clearly the changes

which have been adopted with a view to increase its efficiency and usefulness. These changes appear to me very judicious, and I feel confident that they will produce beneficial results.

The course of instruction had evidently been carried too far in the direction of the exact sciences, while literary and linguistic culture received too little attention. By the new arrangement of studies this error has been corrected, and, besides, it provides for a proper concentration of linguistic study, instead of permitting the beginning of several languages without insisting sufficiently upon the continued pursuit of any one.

The expectations in regard to the success of the present head-master of this school, expressed in my report of last year, have been fully realized.

The following is the new Programme: —

BOSTON GIRLS' HIGH SCHOOL.

COURSE OF STUDY FOR 1873-74.

CLASS	ENGLISH.	HISTORY AND PHILOSOPHY.	PHYSICS AND NATURAL SCIENCE.	MATHEMATICS.	LANGUAGES.	ÆSTHETIC.	INDUSTRIAL.
JUNIOR	{ Rhetoric (Haven's). Literature (Aubrey's). Composition.		Physiology (Hutchinson's). Botany (Gray's).	Algebra (Bradbury's).	Latin (Harkness' Grammar and Reader). French (Böcher's Otto's Grammar and Reader). German (Krauss' Grammar and Schlegel's Fieder).	Drawing. Music.	
MIDDLE	{ Literature (Aubrey's). Composition.	General History (Anderson's).	Chemistry (Elliot, Storer & Nichols'). Mineralogy.	Geometry and Plane Trigonometry (Bradbury's).	Continued. With Latin School Series: Plautus, Justin & Nepos; Cornelle's Cio; Schiller's Wilhelm Tell.	Continued.	Photography. Book-keeping.
SENIOR	{ Shakespeare. Composition.	United States (Anderson's and Lectures). Constitution (Allen's). Science of Government. Ethics (Peabody's).	Physics (DeForest Stewart's). Astronomy (Kiddle's).		Continued. With Æncid; Molière and Racine; Goethe's Egmont.	Continued.	Book-keeping. Phonography.
ADVANCED, OR FOURTH YEAR.	{ History of Literature (Spalding's). Chaucer. Composition.	History, continued. Ancient or Modern. Metaphysics (Porter's Intellectual Science). Political economy (Fawcett's).	Astronomy, continued. (Geology (Dana's)).	Spherical Trigonometry. Analytic Geometry (Loomis').	Continued. With Horace and Cicero; Pöettes Français; Wallenstein.	Continued.	Design.

Elective Studies. — Mathematics may be exchanged for a Language in the Middle Year. The Languages are open to choice; but one is to be taken, and only one at a time, unless a second is substituted for Mathematics in the Middle Year, or added, as it may be, on half-time, as an extra study in the Senior Year. A Language chosen in the Junior or Middle Year is to be studied for two years at least. The Industrial studies are elective; and if Book-keeping is taken, it must be in place of Mathematics or a Language. The advanced Course is elective; but enough of it must be taken to make a good year's work.

ROXBURY HIGH SCHOOL.

The average whole number of pupils belonging during the last half year was 196 — boys, 96, girls, 100 — against 194 for the corresponding six months of the preceding year; the average attendance was 186, and the per cent. of attendance, 95. These pupils were taught by one head-master, and six female teachers, one ranking as head-assistant, and five as assistants. Besides these, five special teachers were employed, namely, one each in drawing, music, military drill, in the French language, and in the German language.

The following table shows the number and average age of the pupils admitted to the Roxbury High School, from Grammar Schools, and from other sources, and also the number of those who joined the school and entered upon the course of study, in the fall of 1873: —

SCHOOLS.	Admitted.		Joined.		Average Age.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Comins.....	15	8	10	5	14.7	14.9
Dearborn	3	4	3	3	16.0	16.5
Dudley.....	..	19	..	18	....	15.9
Dwight.....	1	..	..	..	15.11	....
Everett (Dorchester)	1	2	1	2	15.6	15.10
Lewis	13	14	10	14	15.5	14.10
Sherwin	9	4	8	3	15.	14.10
Washington.....	9	0	5	0	14.7	....
Other sources	11	4	11	2	15.3	15.4
Totals.....	62	55	48	47	15.2	15.1

Of those who joined the school there were, —

Between thirteen and fourteen, . . .	11
Between fourteen and fifteen, . . .	26
Between fifteen and sixteen, . . .	32
Between sixteen and seventeen, . . .	20
Between seventeen and eighteen, . . .	6
	95

DORCHESTER HIGH SCHOOL.

The average whole number belonging for the last half-year was 120 — boys, 50, and girls, 70 — against 123 for the corresponding six months of the preceding year; the average attendance was 107, and the per cent. of attendance, 88.2. These pupils were taught by one head-master, and four female teachers, one ranking as head-assistant, and three as assistants. Besides these five special teachers were employed, namely, one each in drawing, music, military drill, the French language, and the German language. The course of study in this school is very comprehensive, and its arrangement is the result of much experience and study on the part of the principal.

The following table shows the number and average age of the pupils admitted to the Dorchester High School, from Grammar Schools and other sources, and also the number who joined the school and entered upon the course of study in the fall of 1873: —

SCHOOLS.	Admitted.		Joined.		Average Age.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Mather.....	..	11	..	7	....	15.1
Harris	3	8	3	7	15.3	15.3
Everett.....	2	3	2	2	15.5	15.1
Stoughton	3	7	1	7	14.9	14.8
Gibson	..	1	..	1	....	16.5
Tileston	5	3	3	3	15.6	15.2
Minot	6	3	5	3	14.9	15.5
Lincoln	..	1	..	1	....	15.5
Other sources	4	6	4	6	15.10	17.4
Totals.....	23	43	18	37	15.2	15.7

Of those who joined the school there were, —

Between twelve and thirteen,	.	.	0
Between thirteen and fourteen,	.	.	6
Between fourteen and fifteen,	.	.	14
Between fifteen and sixteen,	.	.	19
Between sixteen and seventeen,	.	.	12
Between seventeen and eighteen,	.	.	3
Between nineteen and twenty,	.	.	1

55

EVENING HIGH SCHOOL.

This is one of the most interesting and important of the institutions comprised in our system of public instruction. The pupils are of both sexes, and they are mostly adults. The Principal, William Nichols, Esq., has managed the school with great efficiency and success. He has been well supported by an able corps of assistants, but the teaching force might be strengthened, no doubt, by permitting teachers in the day High Schools to fill some of the instructorships in this school.

The following table shows the statistics of the Evening High School for the past year: —

1872-73.	No. of Sessions.	Average No. Belonging.	Average Attendance.			Average No. of Teachers.	Average No. of Pupils to a Teacher.
			Males.	Females.	Total.		
October	12	854	237	186	443	8	41
November	18	819	228	118	346	10	38
December	21	763	187	113	300	10	31
January	23	620	153	101	254	10	27
February	20	560	134	85	219	9	26
March	14	312	93	80	173	8	24
Totals	108	3,933	1,052	683	1,735	55	187
Averages		656	175	114	289	9.1	31.1

Whole number registered since the opening of the school, 1,578.

ELEMENTARY EVENING SCHOOLS.

The Elementary Evening Schools are doing a useful work, and should be sustained. Still, the plan on which they are conducted is probably susceptible of improvement. I think they could be conducted more efficiently and much more economically if they were accommodated in school-rooms arranged and furnished like those occupied by the day schools.

The following table contains the summary of the statistical reports of the several Elementary Evening Schools, which were in operation from October, 1872, to April, 1873: —

SCHOOLS.	No. of Sessions.	Whole No. Registered.	Average No. Belonging.	Average Attendance.			Average No. of Teachers included in Principal.	Average No. Pupils to a Teacher.
				Males.	Females.	Totals.		
North Bennet street	107	404	117	66	..	66	6.8	11
Chambers Street Chapel	87	369	230	57	28	85	8.0	12
Anderson street	111	348	131	56	19	75	7.8	11
Warrenton Street Chapel	74	266	132	38	33	71	6.0	14
Old Franklin School	111	258	145	68	21	89	9.3	10
Harrison avenue	110	611	349	80	40	120	11.0	12
South Boston	113	318	127	77	..	77	8.0	11
Cabot street	113	552	152	67	27	94	9.1	10
Reed's Hall, East Boston	122	529	162	51	15	66	7.8	11
Hampden street	97	73	51	43	..	43	4.4	11
Totals	1,045	3,728	1,596	603	183	786	78.2	11.3

THE BOSTON COLLECTIVE EXHIBITION AT THE VIENNA EXPOSITION, 1873.

It seems proper that I should embody in this report an account of the exhibition of our educational system which was made at Vienna. This account naturally divides itself into two parts: first, the catalogue of the articles comprised in the Exhibition, preceded by an outline of our system of schools, as prepared for the Jury of the Educational Group; and, second, the results of the comparison of our exhibition with those of other cities and countries.

The Exhibition might have been made more successful, and more creditable, to the city, if the City Council had furnished the requisite means, and this doubtless would have been done, had it not been decided by the City Solicitor to be illegal to appropriate the public money for this object.

OUTLINE OF THE BOSTON SYSTEM OF PUBLIC SCHOOLS.

The system of public instruction in Boston is under the control and management of a Board of School Committee, consisting of the Mayor, who is *ex officio* both a member and the President, the President of the lower branch of the City Council, and ninety-six members elected by the people, for the term of three years, six being chosen in each of the sixteen wards of the city. This Board annually elects a Superintendent of Schools, and a Secretary, and holds regular meetings once a month. The City Council takes charge of the purchasing of the school lots, the erection, repairing and care of school-houses, and of the providing of fuel, the City Superintendent of Public Buildings being the executive officer employed in this service. The Board of School Committee is by

law invested with full power to determine the number and qualifications of teachers, to elect the same and to fix their salaries.

By the school law of the State of Massachusetts, the City of Boston is required to maintain elementary schools, for the instruction of all children, for six months in each year; and *one* High School, for instruction in the Greek, Latin and French languages, and in the higher branches of an English education, is to be kept open ten months in the year. Tuition must be free, and a sum of money must be annually raised by taxation on all property in the municipality, to defray the school expenses, exclusive of the cost of buildings, equal to three dollars for every person in the city between five and fifteen years of age. But the actual provisions for education have been made by the city authorities, in accordance with the sentiments of the people, on a far more liberal scale than the strict legal obligations required, not only in respect to the number and kinds of schools provided, and the length of time they are kept open, but also in the matter of taxation for school purposes, the amount of money raised by voluntary tax being more than *six* times the obligatory sum.

The history of the system begins as early as 1635, when, only five years after the commencement of the settlement of the town by Puritan colonists from England, a free public school for boys was ordered to be set up, by a vote of the people in town meeting. Girls were first admitted to the privileges of the public schools in 1789, but until 1828 they were allowed to attend only half the year. Within the last fifty years the system has been largely developed and extended, by the addition of new provisions for higher instruction, and also for more systematic and thorough training in the first stages of the elementary course. This system of public instruction, exclusive of the special schools which belong to it, consists of three grades of schools, the Primary, Grammar, and High.

Pupils are admitted to the primary grade at five years of age. The course is arranged for six classes and three years. Boys and girls attend together, and are taught together in all branches.

The Grammar Schools are designed to receive the pupils from the Primary Schools at eight years of age and upwards, and carry them on through a thorough course of practical elementary instruction. The course is arranged for six classes, and six years.

The High Schools differ from each other somewhat in their purposes and functions.

The Public Latin School, the first public school established in the city, has, until recently, been quite strictly limited to the function of fitting boys for the college or university. Its present course is arranged for six classes, or six years, candidates being admitted at twelve years, and resembles that of the upper six classes of the German Real gymnasium.

The English High School is intended to furnish those boys who have completed the course of study prescribed for the Grammar Schools, with the opportunity of pursuing more advanced studies, and of acquiring a thorough and liberal English education. The regular course is arranged for three classes and three years; there is a supplementary course of one year. French is taught in the former, and German and Latin in the latter. This school resembles the German Real School.

The Girls' High School is designed to furnish for girls, so far as is practicable and desirable, the advantages for culture afforded by both of the above-named high schools. The regular course is arranged for three years, and there is a supplementary course of one year.

The Highlands' High School is for both sexes, the classes and courses being much like those of the English High, except that Latin is allowed to some extent in the second and third years. Boys and girls attend the same classes, and occupy the same study-rooms.

The Dorchester High School is also like the preceding, for both sexes. It has two courses, both for four years, the one classical, and the other English. Boys are prepared for college or the counting-room, and girls have all the advantages usually afforded in the higher courses of instruction.

Of the Special Schools, the Normal is the most important. It is a professional training school, to qualify female teachers for the public schools of this city. The course is for one year, and candidates must be at least seventeen years of age, and be able to pass examination in the usual High School branches.

The Licensed Minors' Schools are for newsboys and bootblacks, who must attend two hours a day, or forfeit their licenses.

The Deaf Mute School is free to the inhabitants of the city, the

State paying a part of the cost of tuition. The speaking system is taught in accordance with the science of *visible speech*, as developed by Professor A. Graham Bell.

The Kindergarten School has been in operation for several years. The evening schools are of three kinds, but all are for both sexes. There are five Evening Industrial Drawing Schools, in which all the various stages of drawing are taught. One Evening High School, in which Latin, French, German, Mathematics, Physics, Book-keeping and Industrial Drawing are taught. Ten Elementary Evening Schools.

SUMMARY OF STATISTICS.

Population.

Population of the city, United States census, 1870,	. 250,701
Number of children between 5 and fifteen years, 1872,	. 46,144

School Accommodations.

Number of school-houses,		103
Number of school-rooms,		810
Number of class-rooms,		24
Number of assembly halls,		40
Number of sittings (single desks and chairs),		44,892
Present value of school-houses and lots,		\$6,540,097 00

Expenditures.

Amount expended, exclusive of school-houses, '72,	\$1,216,597 65
Average cost per scholar, for day schools,	 33 57
Amount expended for school-houses the last five	
years,	 1,689,219 83
Total expenditure for schools the last five years,	. 6,780,195 15

SCHOOLS, TEACHERS, PUPILS, AND SALARIES.

SCHOOLS.	No. Schools	TEACHERS.			PUPILS.			Salaries.
		Males	Fem.	Total.	Males.	Fem.	Total.	
High Schools	5	} 43	34	77	873	767	1,640	\$125,388
Normal School	1							
Grammar Schools	37	71	416	487	11,343	8,417	19,760	} 711,744
Primary Schools	335	1	335	336	8,093	6,623	14,916	
Minors' Schools	2	...	2	2	59	...	59	1,400
Deaf-Mute School	1	...	3	3	...	...	41	3,719
Kindergarten	1	...	1	1	...	...	20	658
Evening Schools	16	32	63	95	...	...	2,472	20,678
Totals	398*	147	854	1,001	...	...	38,708	\$863,658

RATES OF SALARIES.

GRADES OF TEACHERS.	Number.	1st year.	2d year.
Head Masters of High Schools	5	3,500	4,000
Head Master of Normal School	1	3,500	4,000
Masters in High Schools	15	2,600	3,000
Masters of Grammar Schools	36	2,600	3,200
Sub-masters High and Grammar Schools	32	2,200	2,600
Ushers in Grammar Schools	10	1,700	2,000
Head Assistants (female) High Schools	5	1,500	1,500
Assistants (female) High Schools	20	1,000	1,000
Masters' Assistants (female) Grammar School	37	1,200	1,200
Head Assistants (female) Grammar Schools	63	850	850
Assistants (female) Grammar Schools	298	700	800
Primary Teachers	335	700*	800†
There are 137 other teachers having Salaries ranging from \$400 to \$3,300.			

* 2d year. † 3d year. \$600 1st year.

STATISTICAL CHART.

The following is the substance of the chart prepared for Vienna, exclusive of statistics of the Public School system : —

Total population by United States Census of 1870, 250,701 ; actual valuation of taxable property, \$682,724,300 ; total amount of taxes paid, \$7,759,842 ; per capita of total population, \$30.95 ; school population (5 to 15 years) by enumeration of 1872, 46,144 ; actual valuation of school property, \$6,260,097 ; amount of school taxes for current expenses, \$1,251,600 ; per capita of total population, \$4.99 ; total number of scholars enrolled, 57,214 ; number enrolled in public schools, 44,074 ; number enrolled in private institutions of all grades, 13,140 ; total number of teachers, public and private, 1,694 ; number of members of City School Board, 98 ; name of President, Henry L. Pierce ; name of Secretary, Barnard Capen ; name of Superintendent, John D. Philbrick.

Orphan Asylums. — Number, 14 ; number of instructors, 37 ; number of inmates, 1,344.

Private Schools and Academies. — Number, 93 ; number of instructors, 358 ; number of scholars, 8,247.

Business Colleges. — Number, 5 ; number of instructors, 19 ; number of scholars, 717.

Schools of Pharmacy. — Number, 1 ; number of instructors, 3 ; number of scholars, 75.

Schools of Dentistry. — Number, 2 ; number of instructors, 15 ; number of scholars, 40.

Female Colleges. — Number, 2 ; number of instructors, 31 ; number of scholars, 173.

Colleges. — Number, 1 ; number of instructors, 8 ; number of scholars, 145.

Schools of Theology. — Number, 1 ; number of instructors, 7 ; number of scholars, 94 ; volumes in libraries, 5,000.

Schools of Medicine. — Number, 2 ; number of instructors, 35 ; number of scholars, 195 ; volumes in libraries, 3,300.

Schools of Law. — Number, 1 ; number of instructors, 14 ; number of scholars, 68 ; volumes in libraries, 600.

Polytechnic Schools. — Number, 1 ; number of instructors, 36 ; number of scholars, 356 ; volumes in libraries, 3,000.

Public Libraries. — Number, 14 ; number of volumes, 456,427 ;

number of pamphlets, 232,900 ; number of maps, charts, etc., 1,344 ; value of collections, \$1,132,500 ; value of buildings, etc., \$1,026,700.

Art Museums. — Number, 1 ; number of paintings and engravings, 1,000 ; number of statues and casts, 200 ; number of students, ; value of collections, \$100,000 ; value of buildings, etc., \$400,000.

Scientific Museums. — Number, 1 ; number of specimens in collections, ; volumes in libraries, 10,000 ; number of readers, ; value of collections, \$100,000 ; value of buildings, etc., \$138,000.

Sunday Schools. — Number, 157 ; number of instructors, 4,450 ; number of scholars, 43,540 ; volumes in libraries, 83,700 ; number of churches, 155 ; value of church property, \$6,688,400.

Associations for Mutual Improvement.

CHARACTER.	NO.	MEMBERS, NO.	VALUE OF —		
			Libraries.	Collections.	Instruments, etc.
Literary and Historical .	8	2,404	\$24,350	\$10,700	\$800
Scientific	5	1,657	125,000	. . .	. . .
Artistic and Mutual . . .	9	3,035	19,550	1,500	2,100
Professional	17	2,221	77,725	8,100	. . .
Mental and Moral Culture	6	4,100	. . .	. . .	. . .

IDEA AND DESIGN OF THE BOSTON EXHIBITION.

The main object kept in view, in preparing this Exhibition, was to present as far as practicable, a collection of the books and other appliances actually furnished to, and used in, the Primary and Grammar Schools, including both text-books and books of reference ; a set of school furniture, comprising all sizes and styles of scholars' desks and chairs, and the objects of different descriptions employed in visible illustration, such as globes, maps, charts and tablets, and physical apparatus.

In addition to the above list of school materials, the collection

comprises, with the view to convey some information respecting the extent, organization, management, cost and results of the system of schools, a set of reports covering the last twenty years of its history ; photographs and plans of school buildings of different grades and styles ; examples of scholars' work ; and a statistical summary of all the educational institutions in the city, whether public or private, represented on a wall chart.

The High Schools of the city are only incidentally represented by a set of the text-books used in them, by statistical information, and programmes, and views and plans of buildings.

In the volumes of scholars' work presented, nothing like a complete exhibition of what the pupils can do was contemplated. Only five of the thirty-seven Grammar Schools were represented at all, and the productions from these schools, which were no better than a considerable proportion of the rest, were executed in a short time, each exercise having been prepared in the time of one or two lessons, and *there was no selection of exercises*, the work of *every member of the class* being in all cases taken. Nor was there any selection of pupils to make up classes, except in the case of Primary pupils, who did work on slates, where twenty-five pupils out of the fifty in each of the twelve rooms represented were selected. The drawings show what the scholars were actually engaged upon when the Exhibition papers were sent to the schools to be filled up.

CATALOGUE OF THE COLLECTIVE EXHIBITION.

I. IN GENERAL.

1. Annual Reports of the School Board, 20 in number, 1852-71, with 37 Reports of the Superintendent of Schools, and various special Reports and copies of the Rules and Regulations of the Schools, in 16 vols.
2. Annual Reports of the Committee on Accounts (4), 1870-73 in 1 vol.
3. Report of Committee on Music, 12 copies, 1871.
4. Portfolios (2) of views and plans of Primary, Grammar, and High Schools, 42 in number.
5. Three Special Reports on Truancy and Compulsory Education in the City of Boston, 1862-71, by John D. Philbrick, 1 vol.
6. Chart, showing the organization and courses of study of the Public Schools, and a summary of the Statistics of all the public and private Educational Institutions, Establishments and Societies.
7. Record Books, Grammar Schools, Nos. I., II., III. Attendance Book, Grammar Schools. Record Book, Primary Schools.
8. Copies of the Report of the School Board for 1871, for gratuitous distribution.

II. TEXT-BOOKS.

a. For Primary Schools.

- Hillard, George S. First Reader. Boston.
The same in Dr. Leigh's pronouncing type.
Hillard, George S. Second Reader. Boston.
The same in Dr. Leigh's pronouncing type.
Hillard, George S. Third Reader. Boston.
Worcester, Joseph E. Primary Speller. Boston.
Eaton, James S. Primary Arithmetic. Boston.
Mason, Luther W. First Music Reader. Boston.

b. For Grammar Schools.

- Hillard, George S. Fourth Reader. Boston.
The same. Intermediate Reader. Boston.
The same. Fifth Franklin Reader. Boston.
The same. Sixth Reader. Boston.
Anderson, J. J. Historical Reader. New York.
Hooker, W. Child's Book of Nature. New York.
Worcester, Joseph E. Pronouncing Spelling-Book. Boston.
The same. Comprehensive Dictionary. Boston.
Payson, Dunton & Scribner. Writing-Books in 12 numbers.
New York.
Dunton, A. R. Writing-Books in 8 numbers. Boston.
Eaton, James S. Intellectual Arithmetic. Boston.
The same. Grammar-School Arithmetic. Boston.
Warren, D. S. Primary School Geography. Philadelphia.
The same. Grammar-School Geography. Philadelphia.
The same. Physical Geography. Philadelphia.
Kerl, S. First Lessons in Grammar. New York.
The same. Common-School Grammar. New York.
Anderson, J. J. United States History. New York.
Worcester, Joseph E. General History. Boston.
Mason, Luther W. Music readers, numbers I., II. and III.
Eichberg & Sharland. National Music Reader. Boston.
Steele, J. Dorman. Fourteen Weeks in Natural Philosophy.
New York.

c. For High Schools.

- Groesbeck, John. The Crittenden Commercial Arithmetic and Business Manual. Philadelphia.
Sherwin, Thomas. Elementary Algebra. Boston.
Olney, Edward. Complete School Algebra. New York.
Church, Albert E. Descriptive Geometry. New York.
Brooks, Edward. Geometry and Trigonometry. Philadelphia.
Davies, Charles. Legendre's Geometry. New York.
Pierce, Benjamin. Plane and Solid Geometry. Boston.
Loomis, Elias. Trigonometry. New York.
The same. Analytical Geometry and Calculus. New York.

Comer, Geo. N. Book-Keeping Rationalized. Boston.

Haven, E. O. Rhetoric. New York.

Underwood, F. H. Hand Book of English Literature, British Authors. Boston.

The same. Hand Book of English Literature, American Authors.

Hunt, E. Selections from English Literature. New York.

Macaulay, T. B. Lays of Ancient Rome. New York.

Whately, Richard. English Synonyms. Boston.

Hudson, Henry N. School Shakspeare, first series. Boston.

Collier, William F. English Literature. London.

Quackenbos, G. P. Composition and Rhetoric. New York.

Putnam, G. P. Cyclopædia of Biography. New York.

Boyd, J. R. Milton's Paradise Lost, with notes. New York.

Philbrick, J. D. American Union Speaker. Boston.

Williams, F. S. Le Grand Père, with notes. Boston.

Spiers and Surene. French Pronouncing Dictionary. New York.

Ahn's French Method. New York.

Pløetz, C. Easy French Method. New York.

Alvergnat, V. Class Book of French Pronunciation.

Hall, J. P. First Course, and France and the French. London.

Nouveau Testament. Brussels.

Otto's French Grammar, Bôcher's ed. Boston.

Chouquet, Gustave. First Lessons in French. New York.

Bôcher, F. College Series of French Plays. 2 vols. New York.

Krauss, E. C. F. Elements of German Grammar. Boston.

The same. First Book in Grammar. Boston.

Evans, E. P. Otto's German Reader. New York.

Comfort, G. F. German Course. New York.

Storme, G. Easy German Reading. New York.

Das Neue Testament. Frankfurt-am-Main.

Von Schiller, F. Der Niefte als Onkel. Leipzig.

Köhler, F. German Dictionary. Boston.

Adler, G. J. German Dictionary. New York.

Harkness, Albert. Latin Grammar. New York.

The same. Latin Reader. New York.

The same. Cæsar's Commentaries. New York.

- Smith, William. *Principia Latina*, Parts I. and II. New York.
 Allen & Greenough. *Latin Grammar*. Boston.
 Leighton, R. F. *Latin Lessons*. Boston.
 Anthon, Charles. *Select Orations of Cicero*. New York.
 Folsom, Charles. *Select Orations of Cicero*. New York.
 Gardner, Gay & Buck. *Phædrus, Justin and Nepos*. Boston.
 Frieze, Henry L. *Virgil's Æneid*. New York.
 Andrews, E. A. *Cæsar's Commentaries*. Boston.
 Arnold, T. K. *Cornelius Nepos*. New York.
 Anthon, Charles. *The Æneid of Virgil*. New York.
 Andrews, E. A. *Latin English Dictionary*. New York.
 Leighton, R. F. *Greek Lessons*. Boston.
 Goodwin, W. W. *Greek Reader*. Boston.
 The same. *Greek Grammar*. Boston.
 Arnold, T. K. *Greek Prose Composition*. Owen, J. J. *Iliad*
 of Homer. New York.
 Liddell & Scott. *Greek English Lexicon*. New York.
 Smith, William. *Small History of Rome*. New York.
 The same. *Small History of Greece*. New York.
 Anderson, J. J. *General History*. New York.
 Bloss, C. A. *Ancient History*. New York.
 Sewall, E. M. *History of Rome*. New York.
 The same. *History of Greece*. New York.
 Long, George. *Classical Atlas*. New York.
 Porter, Noah. *Mental Philosophy*, New York.
 Upham, T. W. *Mental Philosophy*, abridged. New York.
 Kiddle, Henry. *Astronomy*. New York.
 Steele, J. Dorman. *Fourteen Weeks in Chemistry*. New York.
 Gray, Asa. *School and Field Book of Botany*. New York.
 The same. *Manual of the Botany of Northern United States*.
 New York.
 Dana, James D. *Mineralogy*. New York.
 Eliot & Storer. *Manual of Inorganic Chemistry*. New York.
 Wells, David A. *Natural Philosophy*. New York.
 Peck, W. G. *Elementary Treatise on Mechanics*. New York.
 Huxley, Thos. H. *Physiology and Hygiene*. New York.
 Dana, James D. *Text Book of Geology*. New York.
 Nichols, W. Ripley. *Elementary Manual of Chemistry*, abridged
 for Eliot and Storer. New York.

- Comins, B. N. Class Book of Physiology. New York.
 Redfield, A. M. Nature in Living Forms.
 Dalton, J. C. A Treatise on Physiology and Hygiene. New York.
 Hooker, W. First Book in Physiology. New York.
 Ganot's Natural Philosophy, by W. G. Peck. New York.
 Macé, Jean. History of a Mouthful of Bread. New York.
 Townsend, Calvin. Analysis of Civil Government. New York.

III. BOOKS OF REFERENCE FOR GRAMMAR SCHOOLS,

Furnished to each of the 37 Grammar Schools.

- Drake, Samuel G. History of Boston from 1630 to 1770. Boston.
 Palfrey, John G. History of New England. 3 vols. Boston.
 Schouler, William. History of Massachusetts in the Civil War. 2 vols. Boston.
 Frothingham, Richard. History of the Siege of Boston. Boston.
 The same. Rise of the Republic of the United States. Boston.
 The same. Life of Joseph Warren. Boston.
 Arnold, Thomas. History of Rome. New York.
 Weber, George. Outlines of Universal History. Boston.
 Smith, William. History of Greece.
 Hawes, S. Synchronology of the Principal Events of History.
 Johnson's New Illustrated Atlas of the World. New York.
 Brown, Gould. Grammar of English Grammars. New York.
 Irving, Washington. Life of Washington. 5 vols. New York.
 Wells, W. V. Life of Samuel Adams. 3 vols. Boston.
 Chambers, R. Cyclopædia of English Literature. 2 vols. Boston.
 Chambers, W. & R. Encyclopædia. 10 vols. New York.
 Duyckinck, Evert and George. Cyclopædia of American Literature. 2 vols. New York.
 Brande, W. T. Dictionary of Science.
 Appleton's New American Cyclopædia. 16 vols. New York.
 Appleton's Annual Cyclopædia. 11 vols. New York.

Barnard, Henry. American Journal of Education. 1856-1872. 23 vols. Hartford.

Worcester's Quarto Dictionary, unabridged. Boston.

Webster's Quarto Dictionary, unabridged. Springfield, Mass.

Webster's National Pictorial Dictionary. New York.

Anthon, Charles. Classical Dictionary. New York.

Thomas, J. Universal Pronouncing Dictionary of Biography and Mythology. 2 vols. Philadelphia.

Smith, William. Classical Dictionary. New York.

Hayden's Dictionary of Dates of all Ages. New York.

Lippincott's Gazetteer of the World. Philadelphia.

Marsh, George P. Man and Nature. New York.

Wilson, John. Treatise on Punctuation. Boston.

Camp, D. N. American Year-Book. Hartford.

Shelden, E. A. Elementary Instruction. New York.

IV. MISCELLANEOUS BOOKS USED BY TEACHERS, IN THE GRAMMAR AND PRIMARY SCHOOLS.

Monroe, L. B. Manual of Vocal and Physical Training. Philadelphia.

Worcester, Joseph E. Primary Dictionary. Boston.

Upton, Emory. Infantry Tactics. New York.

Soule & Wheeler. Manual of English Pronunciation and Spelling. Boston.

Cornell, S. S. Primary Geography. New York.

Mitchell, S. Augustus. New Ancient Geography. New York.

v. Schubert, J. H. Explanatory Key to Natural History. Boston.

Bonner, John. A Child's History of Rome. New York.

A Brief History of the United States. New York.

Greene, S. S. Introduction to Grammar. Philadelphia.

Colburn, W. First Lessons in Arithmetic. Boston.

Walter, Smith. Drawing Copies. 4 parts. Boston.

V. GENERAL APPARATUS.

Payson, Dunton & Scribner's National Writing Charts.

Philbrick's Primary-School Tablets, in 20 numbers.

Leigh's Reading Charts in "Pronouncing Type."

Guyot's Wall Maps. Three Series.

Cornell's Wall Maps.

Warren's Geographical Charts.

Luther W. Mason's Music Charts. 4 series, 40 in each.

Cutter's Physiological Charts.

Prang's Merit Cards.

Prang's Natural History Charts.

Globes, manufactured by Gilman Joslin, namely, two large Globes, terrestrial and celestial, mounted on tripods, and on 9-inch hand globe.

Numeral Frame.

Mathematical Instrument Case.

Box of Object Blocks.

Blackboard Erasers of different kinds.

Drawing Board.

Boston Primary School Slates.

Set of wooden Models for Drawing.

VI. CLASS-WORK OF PUPILS OF DIFFERENT GRADES OF SCHOOLS.

Primary Schools. — Slates, three hundred in number, containing exercises done by as many pupils; the 25 best from each of the six classes in two buildings being designated for this purpose. The exercises comprised printing, writing, numerical figures, music lessons, and drawing.

Grammar Schools. — Specimens of drawings, 4 volumes. Exercises in writing, spelling, business forms, history, geography, grammar, arithmetic, etc. 9 volumes.

High Schools. — Specimens of drawings, 4 volumes.

Evening Drawing Schools. — Large portfolio of drawings.

VII. PHYSICAL APPARATUS.

Furnished by H. B. & W. O. Chamberlain, Boston.

Laws of Matter, etc. — Lead Hemispheres, Inertia Apparatus, Capillary Tubes, Capillary Plates, set of Collision Balls, Centre of Gravity, Mechanical Powers, Central Forces, Illustration of

the Pendulum, set of Geometrical Solids, set of Crystal Medals, set of Cube Root Solids.

Hydrostatics.—Equilibrium Tubes, Upward Pressure of Liquids, Tantalus's Cup, Model of Pump, Archimedes' Principle.

Heat.—Pulse Glass, Ring and Ball Pyrometer, Compound Bar, Fire Syringe and Tinder, Reflectors, Wire Gauze, Conductometer, Principle of Ventilation, Spirit Lamp.

Pneumatics.—Air Pump, Plain Receiver, 1 qt.; Capped Receiver and Sliding Rod, 1 gal.; Hand Glass, Improved Condenser, Condensing Chamber, Expansion Apparatus, Bacchus Illustration, Brass Magdeburg Hemispheres, Barometer Apparatus, Guinea and Feather Tube, Wood Cylinder and Weight.

Electricity.—Electrical Machine, Insulated Conductor, Glass Friction Cylinder, Electroscope, Flier, Stand and Balls, Movable Coal Jars, Lightning and Miser's Plate, Improved set of Leyden Jars, Insulated Stool, Discharger, Gas Pistol, Powder Bomb, Pith Balls, for Dancing.

Magnetics.—Bar Magnet, Large U Magnet and Wheel Armature, Voltaic Battery, Electro Magnet, Helical Ring, Galvanometer, Revolving Magnet, Magnetic Needle and Stand.

Optics.—Prism, Plain, Convex and Concave Neutraliz Lenses, Multiplying Lens, Pair Mirrors, Eye Model and Stand, Newton's Color Disc.

VIII. SCHOOL FURNITURE.

From the manufactory of Joseph L. Ross, Boston.

Single Primary School desks and chairs, 3 sizes; single Intermediate School desks and chairs, 3 sizes; single Grammar School desks and chairs, 5 sizes; single fall-cover Normal School desk and chair; one drawing desk; teachers' desk; table for object lessons; wall book-case; settee; 12 slate racks with 300 slates; chart stand; tablet box; two black-walnut book-cases, for the textbooks and books of reference. A large black-walnut case for physical apparatus, lent from the Lewis Grammar School.

The articles above enumerated were packed in 30 cases, for the making of which 2,000 feet of lumber were required, furnished gratuitously by Joseph L. Ross, Esq.

ARRANGEMENT OF THE EXHIBITION.

The Educational section of the American department was located in the north wing of the west gallery of the Industrial Palace, occupying a plat measuring forty-five feet by about thirty-two feet, partially divided into four alcoves. One of these alcoves was secured for the State of Massachusetts, which was represented by contributions from the town of Newton, the city of Worcester, Boston, and the State Board of Education. The contributions under my charge, exclusive of those from Boston, although valuable, did not require much room for their display. The contributions from Boston being quite bulky could not be fully displayed even in the comparatively large space allowed for it.

Some idea may be obtained of the vexatious delays and difficulties which had to be encountered in preparing for the opening of our Exhibition, from the fact that my attention had to be given to it, with the aid of an efficient assistant, for the most of the time from the 1st of May until the middle of June, the whole of this period being required to get a single one of our boxes of articles transported by express from London to Vienna. Thanks to the good taste of my accomplished and indefatigable assistant, Mr. Elmer P. Howe, of Worcester, one of the Honorary Commissioners of Massachusetts, the arrangement of the articles, as finally made, was quite satisfactory, being calculated to make a good impression upon the passing spectator, and also to facilitate the examination of the various articles by committees and experts. At the back of the alcove was placed a large and handsome case of physical apparatus; on either side was placed a good-sized and tasteful black walnut bookcase, one of which was filled with a handsomely bound set of the books of reference now used in our Grammar Schools, the other, with the text and miscellaneous books used in all the grades of our schools. The floor space of the alcove was mostly occupied by the set of school furniture, comprising eleven school desks, a drawing desk, and a teacher's desk, arranged in the order of a miniature school-room. On the right of the alcove was a showcase for the exhibition and protection of the handsome volumes containing the scholars' work, and on the wall space above were spread out our choicest specimens of drawing. On the centre of the left wall was suspended the beautiful chart of statistics which the gener-

ous donation of Mayor Pierce enabled us to secure ; the rest of the wall on this side being covered with the photographs of our school-houses, which had been removed from the portfolios and put into gilt frames. For these photographs we were indebted to Alderman Thomas Gaffield, who, with his accustomed liberality, offered to defray the expenses of whatever we desired of this description.

The maps, charts, globes, cases of primary slates, and so forth, were so disposed as to render the effect as pleasing as possible, and over the whole floated in graceful folds the beautiful white silk banner, bearing the Boston coat-of-arms, which was presented for the purpose by Mayor Pierce.

COMPARATIVE VIEW.

We now come to the practical question of the comparative merit of the Boston Exposition. The award to Boston of the Grand Diploma of Honor expresses the verdict of the International Jury. By this award the Jury meant to say that Boston made the best exhibit of any American city, and moreover that the exhibit was of such a character and on such a scale as to justify the awarding of this distinction, only two other cities receiving similar honor, namely, Vienna and Berlin. The jury did not mean to express the opinion that the system of public instruction in Boston was absolutely the best in America, but that it made the best representation in Vienna. And of the superiority of Boston in this respect there was no room to doubt.

But it may be interesting and profitable to know the position of Boston at the Exposition as compared, not only with the cities of this country, but also with the foremost cities of culture in other parts of the world.

In certain leading particulars this comparison can be made with a good degree of correctness. And first with respect to the means and support of the schools ; here Boston leads all other large cities. In no other one is there so large an amount raised by taxation for the education of each child of the school age.

In respect to school architecture, while we made a better showing than any other American city, we were quite eclipsed by some of the European cities ; that is, in some of the

foreign cities, school-houses have recently been erected which are architecturally and pedagogically superior to anything we had to show. The city of Vienna has individual school buildings vastly better than the best in Boston; but if you take all the school buildings in Vienna, the good and bad together, the average character of the accommodations afforded to all the children of that city is perhaps not equal to the average accommodations provided for the children of Boston. What I mean to say is this, that Vienna knows how to build, and has built school edifices which are more durable, more safe, more convenient, more costly and more beautiful than any Boston has yet built, or is likely to build, in the near future. The reason of this is, that in Vienna, when a school-house is planned, it is done by the combined science and wisdom of the most accomplished architects, and the most accomplished pedagogists. No mere whim of a school-master and no mere whim of an inexperienced and uneducated architect is allowed to control the design.

In the matter of the school furniture, America is clearly ahead of all other parts of the world, and the Boston exhibition of furniture, comprising single desks and chairs in oak, was, in my judgment, take it all in all, the best thing that America has yet produced; it was, at any rate, the best brought to the Exposition from any source, and was so judged by the committee of experts appointed by the International Jury. I showed this furniture to His Majesty the Emperor of Austria, as an object particularly worthy of his attention, and gave him to understand that every child in the city of Boston was supplied with such furniture. This statement was, I think, the most surprising thing I could tell to any European educator. This furniture was contributed by Joseph L. Ross of this city, not only the oldest manufacturer of school furniture in America, but the first who undertook this branch of business as a specialty, who incurred an expense for the Boston contribution, of nearly five hundred dollars, without any claim or expectation of a return either in money or honor; and it is right to say that without his contribution the Boston exhibition would have been a comparative failure. He received a Medal of Merit.

Our collection contained a complete set of our School Reports, bound in sixteen handsome octavo volumes, which attracted much

attention, and was without doubt the best, the fullest, and most complete set of city reports on exhibition.

The set of physical apparatus was admitted by all to be more extensive, and of better quality in all respects, than any set on exhibition designed for elementary schools. The manufacturers, H. B. & W. O. Chamberlain, who contributed this splendid set, well deserved a high honor, but failed of it simply through an informality, as it was entered in the catalogue only in connection with the Boston collective exhibition, and not also as a separate contribution.

The Educational Chart was the thing of which we had good reason to be proud, both on account of its mechanical execution and the completeness of the statistical summary which it contained. This summary comprised the most important statistics of the educational institutions in the city, both public and private, the public libraries, the Sunday schools and Sunday-school libraries, scientific museums, and the associations and organizations for scientific, professional, literary, and moral improvement.

Our samples of globes, from the manufactory of Mr. Gilman Joslyn, of this city, were at least equal in quality to any on exhibition, and they failed to receive a prize, only because their cost was considered too high for common schools, according to the European standard.

The Boston Primary School slates, with drawing, printing and writing copies on the frames, of which there were three hundred, containing work done by the six primary classes of the Lynch and City Point schools, elicited much commendation. They were the best things in their line.

The system of musical instruction in our schools, as represented by the last report of the Chairman of the Committee on Music, Dr. J. Baxter Upham, the programme for musical instruction in the different grades of schools, the musical text-books by Messrs. Eichberg, Sharland, Holt and Mason, and especially the four series of musical charts by Luther W. Mason, was unanimously and emphatically declared by the able committee of experts on this subject to be the best in existence. The charts, which are the fruit of many years of labor and experiments by Mr. Mason, were regarded as vastly superior to everything else of the kind known to exist, and accordingly their author was honored by the award of a Medal

of Merit. From the personal observations subsequently made, I was unexpectedly convinced, that the musical instruction given in our schools is at least equal in excellence to that of the most cultivated cities of Germany. Our extraordinary proficiency in this branch of education reflects the highest credit upon our teachers, upon the Committee on Music, whose wisely directed efforts have so largely contributed to this success, and especially upon the chairman, Dr. Upham, who for more than fifteen years has been the leading spirit in devising, advocating and executing the measures which have resulted in this achievement.

For our scholars' work we won no laurels. The jury decided to take no account of scholars' work from elementary schools, as it was found impossible to examine the whole mass exhibited. This was perhaps fortunate for us, for although the schools which furnished the specimens deserve great credit for what they did, considering the shortness of the time allowed for their work, yet I soon discovered that the productions of our schools had not been elaborated with sufficient care to insure a successful competition with those sent from some of the German and Austrian cities.

The two branches of scholars' work which show best on paper are writing and drawing. Writing is much better taught in Europe than in America. In the matter of drawing, Boston is just now probably taking the lead of American cities; but what we have accomplished thus far is only a mere beginning in comparison with what is done in some of the cities of Europe. All the specimens of drawing sent to the Exposition from Chicago, Cincinnati, Baltimore, New York, Boston and other American cities, taken all together, were quite inferior, both in quality and quantity, to the specimens exhibited by a single one of the higher elementary schools in Vienna.

Our set of books of reference for the Grammar Schools attracted much attention; it was undoubtedly the most complete and valuable set of books for such a purpose on exhibition. Among the works comprised in this set, the twenty-three massive volumes of Barnard's Journal of Education were the most highly prized by foreign educators, who regarded it as a wise and liberal policy on the part of our school authorities, to place such a work within easy reach of all the teachers of our public schools.

There were many other articles of minor importance in our exhibition which it is perhaps unnecessary to refer to in detail.

I have thus indicated some of our excellences and defects as shown in the results of the exhibition. It is my purpose in a future report to show more in detail wherein I think Boston may profit by the examples of some foreign cities. In the mean time my report to the Legislature of the Commonwealth, as Educational Commissioner to the Exposition, will, I trust, come to the hands of the members of the School Board.

The members of the Board are aware that not a dollar was appropriated by the city to defray the expenses of the Exhibition, the City Solicitor having decided that such an appropriation would be illegal. The Board then voted to loan, for the purposes of Exposition, such of the material in its possession as might be deemed desirable to make up the proposed collection; but it turned out that, through the active exertions of Mr. George A. Smith, our efficient auditing clerk, a very large proportion of the articles sent were contributed by publishers and manufacturers free of expense. Most of the articles so contributed were either sold or given away. What belongs to the city has been repacked and placed on board a government vessel for reshipment to New York. I beg to return my sincere thanks to the Special Committee of the Board on the Exposition consisting of Messrs. W. P. Adams, Moody Merrill, Geo. A. Thayer, James Morse, W. T. Adams, who so cordially co-operated with me in all my efforts.

I am under the greatest obligations to the Board for the leave of absence granted by their unanimous vote for the purpose of attending the Exposition and of studying foreign systems of education. I was absent from my post from the 12th day of April until the 6th day of October. The whole period of my absence was exclusively devoted to educational objects. Four months were spent in Vienna in performing my duties as a United States Honorary Commissioner, as Educational Commissioner of the State of Massachusetts, as a representative of Boston in charge of its collective exhibition, and as a member of the International Jury of the Educational Group. During this period of four months, all the time that could be spared from the duties required at

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the Exposition was devoted to the examination and study of the vast and comprehensive system of education in Vienna, from the Folhs schools up to the Imperial University, for which the amplest facilities were afforded me by the Imperial Minister of Instruction, Dr. Stremayr, who kindly furnished me with a letter, directing all educational authorities throughout the Austrian Empire to open their institutions to my inspection, and to afford me as far as possible the information I might desire. The remaining month was spent on the continent and in England, and was devoted to educational observation and inquiry in several important cities. The saving of time by night travel enabled me in this short period to visit Munich, Stuttgart, Swandorf, Nuremberg, Prague, Dresden, Leipsic, Berlin, Hanover, Cologne, Coblenz, Brussels, Paris and London. In nearly all these cities I visited institutions of education of all grades, conversed with educational men, and procured educational documents and books. The educational collection I brought home contains about seven hundred publications, which I hope will be serviceable in promoting the cause of education.

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Respectfully submitted.

JOHN D. PHILBRICK,
Supt. of Public Schools.

OCTOBER, 1873.

STATISTICS

ACCOMPANYING THE SEMI-ANNUAL REPORTS OF THE SUPERINTENDENT
OF SCHOOLS FOR THE SCHOOL YEAR

1872-1873.

STATISTICS OF THE SCHOOLS.

TEACHERS.

Tables showing the number of teachers of each sex, in the different grades of schools, July 31, 1873.

REGULAR TEACHERS.

SCHOOLS.	Males.	Females.	Total.
Latin School	10	...	10
English High School	18	...	18
Girls' High School	1	25	26
Normal School	1	4	5
Highlands High School	1	6	7
Dorchester High School	1	4	5
Grammar Schools	68	398	466
Primary Schools	...	340	340
Licensed Minors' School	...	2	2
Deaf-Mute School	...	5	5
Evening Drawing-Schools	10	1	11
Evening Schools	31	84	115
Kindergarten School	...	1	1
Totals	141	870	1,011

SPECIAL TEACHERS.

SCHOOLS.	Males.	Females.	Total.
Vocal and Physical Culture: all the Schools	1	...	1
Military Drill: Latin, English High and Highlands . . .	1	...	1
Drawing: High and Grammar Schools	5	1	6
French: High Schools	3	1	4
German: High Schools	2	...	2
Music: High, Grammar and Primary	5	...	5
Sewing: Grammar Schools	...	20	20
Totals	17	22	39

HIGH SCHOOLS.

Abstract of Semi-Annual Returns, January 31, 1873.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Head Master.	Masters.	Sub-Masters.	H. Assistants.	Assistants.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Latin	33	16	206	. . .	206	197	. .	197	9	96.0	1	9	. . .	. . .	. . .
English High	296	41	571	. . .	571	554	. .	554	17	96.9	1	5	12	. . .	. . .
Girls' High	462	180	. . .	632	632	. .	584	584	48	92.0	1	. . .	6	19	. . .
Normal	55	1	. . .	53	53	. .	48	48	5	92.0	1	. . .	1	3	. . .
Roxbury High	95	25	107	108	215	103	104	207	8	96.2	1	. . .	1	5	. . .
Dorchester High	136	14	53	73	126	49	66	115	11	91.0	1	. . .	1	3	. . .
Totals	1077	277	937	866	1803	903	802	1705	98	94.0	6	14	12	9	30

HIGH SCHOOLS.

Abstract of Semi-Annual Returns, July, 1873.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Head Masters.	Masters.	Sub-Masters.	H. Assistants.	Assistants.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.							
Latin	1	38	190	. . .	190	178	. .	178	12	93.0	1	9	. . .	. . .	. . .
English High	2	54	533	. . .	533	520	. .	520	18	96.5	1	5	12	. . .	. . .
Girls' High	77	117	. . .	582	582	. .	544	544	38	93.6	1	. . .	6	19	. . .
Normal	69	3	. . .	61	61	. .	55	55	6	90.0	1	. . .	1	3	. . .
Roxbury High	3	33	96	100	196	91	95	186	10	95.0	1	. . .	1	5	. . .
Dorchester High	10	21	50	70	120	45	62	107	13	88.2	1	. . .	1	3	. . .
Totals	162	266	874	813	1687	834	756	1590	97	91.8	6	14	12	9	30

*Number of Boys admitted to the English High School from the Grammar Schools
during the years 1845-1873.*

Schools.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.
Adams	10	10	7	9	9	5	11	11	0	0	0	0	1	2	7	5	3	1	7	2	7	8	4	13	1	11	12	14	5
Bigelow . . .	4	1	2	5	7	4	3	4	5	6	7	8	9	15	10	9	5	3	6	4	13	13	19	16	21	24	39	32	25
Boylston . . .	5	2	4	4	1	3	0	2	2	1	1	0	0	0	3	4	3	0	2	4	9	2	4	14	2	0	0	9	7
Brimmer . . .	2	3	7	4	10	11	5	11	8	10	16	10	19	13	19	25	19	18	18	15	23	24	33	27	21	24	29	27	34
Chapman . . .	.	.	.	.	0	0	3	1	3	3	3	2	1	3	2	5	5	1	3	6	3	4	12	17	9	14	8	6	5
Dwight	0	0	1	4	2	3	4	3	4	3	3	5	1	7	5	9	13	20	14	45	34	35	33	23	27	38	35	62	25
Eliot	9	6	9	2	6	2	0	4	9	9	9	7	8	4	3	4	4	3	8	6	8	13	8	9	20	11	14	21	14
Latin	1	2	5	4	0	0	0	4	3	5	5	2	8	2	1	0	6	6	2	4	3	3	2	3	1	7	2	2	1
Lawrence . . .	.	.	.	.	.	.	.	.	.	.	.	0	0	0	6	4	2	5	1	2	1	7	5	6	14	18	24	22	19
Lincoln	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0	6	3	4	3	6	3	8	5	17	15	18	23	24	18
Lyman	3	5	4	.	6	1	2	0	4	3	2	1	0	0	2	2	2	0	0	0	1	5	7	6	6	7	11	10	12
Mayhew	9	3	4	8	6	11	8	11	14	7	3	6	13	6	9	7	6	5	6	9	8	15	11	7	10	5	9	12	4
Phillips	4	10	10	12	8	9	7	7	7	6	6	3	5	8	7	9	9	13	2	13	7	13	7	9	10	10	16	15	21
Prescott	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	9	6	7	14	19	11
Quincy	.	.	0	2	3	10	8	11	12	4	11	8	18	14	8	9	6	8	11	7	16	16	10	12	12	15	7	18	21
Worcester . . .	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10	18	26	35	50	30

GRAMMAR SCHOOLS.

Abstract of Semi-Annual Returns, January 31, 1873.

SCHOOLS.	Admitted.	Discharged.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	Ushers.	H. Assistants.	Assistants.	Sew'g Teachers.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.								
Adams	274	293	307	157	464	280	146	426	38	91.7	1	1		4	6	
Bigelow	251	140	894		894	847		847	47	94.8	1	2	1	2	14	
Bowditch	332	371		453	453		427	427	25	94.0	1			4	8	1
Bowdoin	284	311		460	460		421	421	39	91.4	1			3	7	1
Boylston	262	267	190	185	375	177	165	342	33	91.2	1	1		1	7	1
Brimmer	319	274	569		569	534		534	35	94.1	1	1	1	2	10	
Chapman	542	61	215	242	457	204	226	430	27	94.5	1	1		4	6	1
Comins	67	39	403	397	800	378	376	754	46	94.0	1	1		5	11	1
Dearborn	513	442	402	373	775	369	343	712	63	92.0	1	1		4	11	1
Dorchester Dis't.	543	439	572	556	1,128	522	484	1,006	122	86.7	7			8	21	1
Dudley	124	106		257	257		238	238	19	92.0	*1			2	4	1
Dwight	107	47	561		561	538		538	23	96.0	1	1	1	2	7	
Eliot	682	757	615		615	568		568	47	92.4	1	1	1	2	11	
Everett	394	247		664	664		630	630	34	94.8	1			4	10	1
Franklin	144	95		643	643		591	591	52	91.9	1			4	10	1
Hancock	587	777		632	632		589	589	43	93.2	1			5	12	1
Lawrence	403	372	826		826	797		797	29	96.5	1	1	2	2	12	
Lewis	348	323	320	293	613	321	272	573	40	93.1	1	1		3	8	1
Lincoln	295	99	445	363	808	417	341	758	50	94.0	1	1		4	11	1
Lyman	376	205	388	189	577	365	176	541	36	93.2	1	1		3	8	1
Mayhew	336	303	431		431	399		399	32	92.2	1	1	1	2	7	
Norcross	359	282		683	683		656	656	27	97.1	1			3	11	1
Phillips	99	162	525		525	475		475	50	90.0	1	1	1	2	8	
Prescott	431	382	321	295	616	301	272	573	43	93.0	1	1		4	7	1
Quincy	293	343	522		522	487		487	35	93.3	1	1	1	2	7	
Rice	661	346	605		605	569		569	36	94.0	1	1	1	2	9	
Sherwin	578	538	437	356	793	414	332	746	47	94.0	1	1		4	12	1
Shurtleff	385	287		667	667		614	614	53	92.0	1			4	10	1
Washington . .	49	13	262		262	249		249	13	95.0	1	1		1	4	
Wells	389	293		399	399		374	374	25	93.7	1			3	7	1
Winthrop . . .	848	730		683	683		610	610	73	89.4	1			5	12	1
Totals . .	11,875	9440	9,810	8,047	18,757	9,191	8,283	17,474	1283	93.1	37	21	10	100	288	20

* Female Principal.

GRAMMAR SCHOOLS.

Abstract of Semi-Annual Returns, July 31, 1873.

SCHOOLS.	Admitted.	Discharged.	Average whole Number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Sub-Masters.	Masters' Ass'ts.	H. Assistants.	Assistants.	Sew'g Teachers.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.								
Adams . . .	183	219	321	165	486	297	153	450	36	92.5	1	1	1	2	7	1
Bigelow . .	168	211	942	...	942	897	...	897	45	95.3	1	2	1	1	14	.
Bowditch . .	172	200	...	421	421	...	396	396	25	94.0	1	.	1	3	8	1
Bowdoin . .	188	192	...	481	481	...	444	444	37	92.0	1	.	1	2	7	1
Boylston . .	170	185	201	202	403	189	187	376	27	92.8	1	1	1	.	8	1
Brimmer . .	230	247	608	...	608	579	...	579	29	95.2	1	1	1	1	10	.
Chapman . .	71	53	226	250	476	214	232	446	30	93.6	1	1	1	3	6	1
Comins . . .	991	182	447	445	892	410	403	813	79	91.0	1	1	2	3	12	1
Dearborn . .	342	361	416	384	800	383	346	729	71	91.0	1	1	1	3	11	1
Dorchester Dis	475	453	605	582	1,187	548	515	1,063	124	89.4	7	.	.	7	24	1
Dudley . . .	111	171	...	258	258	...	237	237	21	92.0	*	1	1	1	4	1
Dwight . . .	110	53	584	...	584	558	...	558	26	95.5	1	1	1	1	9	.
Eliot	280	268	670	...	670	630	...	630	40	94.0	1	1	1	1	11	.
Everett . . .	152	276	...	677	677	...	639	639	38	94.3	1	.	1	3	10	1
Franklin . .	321	361	...	682	682	...	636	636	46	93.2	1	.	1	3	10	1
Hancock . .	299	289	...	662	662	...	631	631	31	95.0	1	.	1	4	12	1
Lawrence . .	326	351	899	...	899	867	...	867	32	96.5	1	1	2	1	12	.
Lewis	266	266	342	307	649	324	288	612	37	94.2	1	1	1	2	9	1
Lincoln . . .	130	57	487	348	835	452	322	774	61	93.0	1	1	1	3	12	1
Lyman . . .	132	148	424	191	615	398	182	580	35	94.0	1	1	1	2	9	1
Mayhew . .	166	165	433	...	433	401	...	401	32	92.0	1	1	1	1	7	.
Norcross . .	252	277	...	738	738	...	712	712	26	96.5	1	.	1	2	11	1
Phillips . . .	123	32	558	...	558	499	...	499	59	90.2	1	1	1	1	8	.
Prescott . .	216	251	335	311	646	314	290	604	42	93.5	1	1	1	3	8	.
Quincy . . .	190	176	522	...	522	500	...	500	22	95.7	1	1	1	1	7	.
Rice	239	366	666	...	666	633	...	633	33	96.0	1	1	1	1	10	.
Sherwin . .	506	527	453	391	844	431	366	797	47	94.5	1	1	1	3	13	1
Shurtleff . .	315	297	...	719	719	...	655	655	64	91.0	1	.	1	2	10	1
Washington .	21	19	283	...	283	269	...	269	14	95.0	1	1	.	1	4	.
Wells	223	222	...	419	419	...	395	395	24	94.0	1	.	1	2	7	1
Winthrop . .	477	526	...	721	721	...	649	649	72	90.0	1	.	1	4	11	1
Totals . .	7825	7401	10,422	9,354	19,776	9,793	8,678	18,472	1305	93.4	37	21	10	30	67	20

* Female Principal.

GRAMMAR SCHOOLS.—DORCHESTER.

Abstract of Semi-Annual Returns, January 31, 1873.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Assistants.	Sewing Teachers.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Atherton	5	23	12	11	23	10	9	19	4	80.2	*1	1	..
Everett.....	85	78	102	93	195	93	83	176	19	89.0	1	4	..
Gibson	30	14	61	47	108	56	41	97	11	89.5	1	3	..
Harris.....	105	91	96	100	196	89	90	179	17	91.4	1	5	..
Mather.....	173	140	108	101	209	95	82	177	32	84.0	1	6	1
Minot	67	51	76	80	156	71	69	140	16	89.0	1	3	..
Stoughton ...	38	5	72	89	161	67	79	146	15	90.5	1	4	..
Tileston.....	40	37	45	35	80	41	31	72	8	90.2	1	2	..
Totals.....	543	439	572	556	1128	522	484	1006	122	86.7	8	28	1

* Female Principal.

GRAMMAR SCHOOLS.—DORCHESTER.

Abstract of Semi-Annual Returns, July, 1873.

SCHOOLS.	Admitted.	Discharged.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Masters.	Head Assistants.	Assistants.	Sewing Teachers.
			Boys.	Girls.	Total.	Boys.	Girls.	Total.						
Everett ..	117	89	119	113	232	108	102	210	22	90.0	1	1	5	.
Gibson*..	19	45	75	65	140	68	56	124	16	88.8	1	2	2	..
Harris ...	110	111	104	112	216	95	100	195	21	90.2	1	1	3	1
Mather ..	131	101	118	104	222	106	90	196	26	88.0	1	1	6	..
Minot ...	78	74	74	74	148	68	66	134	14	90.0	1	1	3	..
Stoughton	5	16	69	82	151	61	72	133	18	88.0	1	1	3	..
Tileston .	15	17	46	32	78	42	29	71	7	91.1	1	....	2	..
Totals..	475	453	605	582	1187	548	515	1063	124	89.4	7	7	24	1

* Grammar Class of Atherton included in Gibson.

GRAMMAR SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, January 31, 1873.

SCHOOLS.	SCHOOLS.															
	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole number.	Under eight yrs.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years.	Fourteen years.	Fifteen years and over.
Adams	26	38	111	86	88	101	450	. . .	5	47	52	98	81	72	51	44
Bigelow	50	73	137	155	220	258	893	4	61	143	135	147	154	137	70	42
Bowditch	35	60	32	40	64	179	410	1	21	45	93	66	74	55	31	24
Bowdoin	45	89	84	100	56	104	478	2	16	50	66	75	81	75	60	53
Boylston	25	28	59	125	68	61	366	1	17	39	65	78	82	55	19	10
Brimmer	42	78	93	122	119	138	592	2	19	78	109	75	101	105	66	37
Chapman	33	31	92	98	113	102	469	. . .	23	46	74	76	59	82	56	53
Comins	62	65	109	111	236	262	845	1	24	88	141	170	176	143	71	31
Dearborn	73	79	94	105	218	193	762	. . .	30	30	139	135	138	145	85	60
Dorchester District	103	114	217	204	307	273	1218	10	43	109	164	205	217	213	151	106
Dudley	24	35	45	41	48	56	249	2	11	29	41	37	33	29	35	32
Dwight	43	98	91	100	96	144	572	. . .	31	45	94	105	106	89	64	38
Ellot	29	68	73	81	174	166	591	5	43	95	118	106	101	78	34	11
Everett	40	92	96	137	138	141	644	3	22	52	76	111	103	113	77	87

Franklin	36	83	79	89	142	104	628	. . .	16	48	87	86	110	112	83	86
Hancock	30	86	64	113	144	147	584	9	45	73	106	99	124	67	41	20
Lawrence	45	91	96	200	181	207	820	2	54	91	140	130	172	116	77	38
Lewis	63	80	125	110	110	106	594	1	6	39	99	103	116	82	78	70
Lincoln	88	96	112	160	167	203	826	5	41	82	126	139	160	125	86	61
Lyman	47	59	66	95	143	162	572	1	26	61	91	105	90	95	77	23
Mayhew	24	41	77	38	96	123	399	. . .	6	57	69	67	77	61	38	24
Norcross	51	76	86	102	148	221	684	2	17	72	121	123	132	131	51	35
Phillips	37	50	130	83	90	95	485	. . .	31	63	72	91	80	85	39	24
Prescott	40	43	112	109	114	209	627	1	21	64	87	102	125	99	78	50
Quincy	29	70	70	38	127	140	474	5	30	69	89	79	81	65	48	8
Rice	35	46	84	123	156	161	605	. . .	19	61	97	133	115	96	63	21
Sherwin	60	75	92	100	204	246	777	2	36	85	134	137	134	110	62	57
Shurtleff	44	51	105	90	188	169	647	. . .	26	81	104	115	110	81	73	57
Washington	33	46	55	54	54	58	300	12	22	39	52	49	38	43	20	19
Wells	25	38	35	85	78	119	380	. . .	14	41	55	65	61	61	44	39
Winthrop	52	68	86	92	170	188	656	2	26	72	94	109	95	88	79	91
Total	1,369	2,052	2,807	3,186	4,257	4,926	18,537	73	802	1,994	2,990	3,236	3,323	2,909	1,913	1,354

GRAMMAR SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, July 31, 1873.

SCHOOLS.	Whole number.										Under eight yrs.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years.	Fourteen years.	Fifteen years and over.
	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole number.	Under eight yrs.	Eight years.	Nine years.	Ten years.	Eleven years.	Twelve years.	Thirteen years.	Fourteen years.	Fifteen years and over.			
Adams	23	30	95	88	82	97	415	. . .	6	31	64	75	94	53	47	45			
Bigelow	42	67	113	141	241	261	865	3	79	123	153	138	141	119	76	33			
Bowditch	35	63	31	32	70	149	383	2	24	40	63	78	67	45	30	34			
Bowdoin	40	83	82	90	92	98	485	1	28	42	62	78	80	78	61	55			
Boylston	20	34	63	61	68	100	351	2	32	48	67	56	73	52	15	6			
Brimmer	45	77	77	118	132	139	588	7	43	57	92	82	89	114	62	42			
Chapman	33	27	92	98	108	141	494	2	20	50	71	91	72	71	57	60			
Comins	48	52	72	83	216	338	809	10	54	101	122	136	140	133	75	38			
Dearborn	61	89	84	85	202	222	743	. . .	15	48	99	149	158	109	86	79			
Dorchester District	90	129	198	243	317	271	1,248	6	60	127	202	199	210	196	143	105			
Dudley	22	15	36	18	24	74	189	2	16	23	24	28	23	19	23	31			
Dwight	34	41	30	41	73	113	332	1	21	49	55	53	54	44	30	25			
Eliot	28	74	75	76	179	171	603	6	50	80	126	115	109	62	41	14			
Everett	36	61	77	100	119	114	507	. . .	22	37	67	67	74	85	70	85			

Franklin	33	81	71	86	128	189	588	2	23	60	83	85	71	96	92	76
Hancock	27	80	69	129	138	151	594	4	46	86	99	124	95	73	39	28
Lawrence	46	76	84	177	200	212	795	1	42	95	154	141	156	121	60	25
Lewis	64	100	131	104	113	110	622	1	22	48	83	93	127	101	65	82
Lincoln	80	90	113	154	169	261	867	4	40	84	125	122	159	136	111	86
Lyman	24	45	76	109	137	155	566	1	21	56	90	81	112	93	58	44
Mayhew	18	38	63	34	116	129	398	2	26	54	67	50	72	53	42	32
Norcross	48	74	94	108	135	205	664	2	18	65	102	114	128	118	72	45
Phillips	32	48	156	108	105	112	561	. . .	9	69	104	111	105	97	37	29
Prescott, ...	40	38	86	101	96	231	592	4	30	60	87	92	125	86	63	45
Quincy	31	36	75	85	102	159	488	3	46	59	96	80	81	57	40	26
Rice	31	31	57	103	125	131	478	. . .	32	65	79	79	87	62	52	22
Sherwin	50	58	79	99	221	247	754	4	53	74	118	144	141	104	57	59
Shurtleff	43	39	92	95	187	224	680	3	30	84	120	109	120	85	78	51
Washington	29	32	47	48	49	54	259	1	17	42	49	35	32	38	31	14
Wells	25	35	31	88	94	108	381	. . .	17	51	45	70	53	55	45	45
Winthrop	55	60	77	94	143	178	607	9	38	58	104	83	96	77	70	72
Total	1,243	1,806	2,525	2,996	4,181	5,144	17,896	83	980	1,966	2,872	2,958	3,144	2,632	1,828	1,433

GRAMMAR SCHOOLS. — *Dorchester.*

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, January 31, 1873.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. Jan. 31, 1872.	Under 8 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.	15 years & over.
Everett . . .	14	22	51	30	44	50	211	1	11	18	27	43	47	28	21	15
Gibson* . . .	9	23	18	35	35	29	149	..	2	12	27	23	24	24	20	17
Harris . . .	19	17	34	30	72	62	234	..	6	33	45	43	30	37	19	21
Mather . . .	26	29	19	23	76	51	224	3	13	18	31	34	39	39	34	13
Minot	17	8	35	27	45	26	158	1	5	15	10	19	29	35	25	19
Stoughton . .	18	15	38	45	21	29	166	..	1	6	16	32	36	37	23	15
Tileston . . .	..	..	22	14	14	26	76	5	5	7	8	11	12	13	9	6
Totals . .	103	114	217	204	307	273	1218	10	43	109	164	205	217	213	151	106

* Grammar Class at Atherton reckoned with Gibson.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each Grammar School, July, 1873.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. July, 1873.	Under 8 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.	15 years & over.
Everett . . .	13	20	42	72	56	50	253	..	19	36	46	34	40	30	24	23
Gibson* . . .	2	19	17	20	31	35	124	..	3	7	16	25	23	20	21	9
Harris . . .	16	26	44	47	51	24	208	3	4	26	40	43	31	26	16	19
Mather . . .	26	25	19	23	97	54	244	1	17	25	38	34	39	41	26	23
Minot	7	23	31	22	45	33	161	..	6	20	26	23	31	33	16	6
Stoughton . .	16	16	35	42	20	49	178	..	3	8	27	29	34	32	29	16
Tileston . . .	10	..	10	17	17	26	80	2	8	5	9	11	12	14	11	8
Totals . .	90	129	198	243	317	271	1248	6	60	127	202	199	210	196	143	105

* Grammar Class at Atherton reckoned with the Gibson.

Table showing the number of Pupils sent to the High Schools by each Grammar School, July, 1873.

SCHOOLS.	Latin School.	English High School.	Girls' High and Normal Schl.	Highlands High School.	Dorchester High School.	Totals.
Adams	...	5	...	...	...	5
Bigelow	1	25	...	...	...	26
Bowditch	...	...	8	...	...	8
Bowdoin	...	...	20	...	...	20
Boylston	...	7	1	...	...	8
Brimmer	4	34	...	...	...	38
Chapman	...	5	17	...	...	22
Comins	...	...	3	23	...	26
Dearborn	...	...	5	7	...	12
Dorchester District . . .	4	...	2	3	65	74
Dudley	...	...	3	19	...	22
Dwight	4	25	...	1	...	30
Eliot	1	14	...	...	...	15
Everett	...	...	22	...	...	22
Franklin	...	...	25	...	...	25
Hancock	...	...	15	...	...	15
Lawrence	3	19	...	...	...	22
Lewis	...	...	12	27	...	39
Lincoln	1	18	17	...	1	36
Lyman	1	12	5	...	...	18
Mayhew	...	4	...	...	...	4
Norcross	...	...	13	...	...	13
Phillips	2	21	...	...	...	23
Prescott	6	11	10	...	...	27
Quincy	1	21	...	...	...	22
Rice	9	30	...	...	...	39
Sherwin	...	...	5	13	...	18
Shurtleff	...	...	28	...	...	28
Washington	...	...	...	9	...	9
Wells	...	...	15	...	...	15
Winthrop	...	...	23	...	...	23
Total	37	251	249	102	66	705

PRIMARY SCHOOLS.

Abstract of Semi-Annual Returns, January 31, 1873.

DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 yrs.	Over 8 yrs.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Adams	9	309	106	415	276	94	370	45	87.7	209	205	414
Bigelow	13	334	261	595	312	230	542	53	91.0	374	209	583
Bowditch . . .	10	145	157	302	131	136	267	35	88.1	181	94	275
Bowdoin . . .	11	204	207	411	179	180	359	52	87.3	217	174	391
Boylston . . .	6	143	140	283	136	123	264	24	91.6	201	79	280
Brimmer . . .	12	211	197	408	189	171	360	48	88.8	270	143	413
Chapman . . .	10	278	160	438	250	139	389	49	88.4	208	139	437
Comins	18	460	428	888	420	376	796	92	82.5	514	338	852
Dearborn . . .	17	426	337	813	377	332	709	104	81.3	418	368	786
Dorchester . .	20	453	410	863	392	340	732	131	84.3	437	408	845
Dwight	6	157	138	295	146	125	271	24	91.6	192	123	315
Eliot	16	355	222	577	322	206	528	49	90.6	366	205	571
Everett	10	296	260	556	274	238	512	44	91.4	323	256	579
Franklin . . .	6	150	113	263	137	101	238	25	90.0	160	101	261
Hancock . . .	19	358	379	737	336	344	680	57	91.2	431	234	665
Lawrence . . .	12	537	...	537	516	...	516	21	94.6	298	258	556
Lewis	10	273	232	505	243	202	445	60	87.6	286	235	521
Lincoln	11	345	244	589	313	220	533	51	91.1	319	270	589
Lyman	8	239	121	360	218	108	326	34	90.0	223	137	360
Mayhow	7	163	78	240	137	63	200	40	83.4	148	115	263
Norcross . . .	14	223	423	646	216	399	615	31	95.0	385	249	634
Phillips	7	151	97	248	133	84	217	81	86.0	120	112	232
Prescott . . .	10	264	222	486	240	192	432	54	88.7	271	201	472
Quincy	11	207	171	378	189	154	343	35	89.8	223	129	357
Rice	12	290	264	554	263	236	499	55	89.8	319	266	585
Sherwin	12	294	285	579	275	259	534	45	92.9	385	209	594
Shurtleff . . .	14	373	332	705	339	293	632	73	89.2	423	268	696
Washington . .	8	175	166	341	159	145	304	37	88.6	214	119	333
Wells	12	236	246	482	217	224	441	41	92.0	297	183	480
Winthrop . . .	9	161	187	348	149	167	316	32	90.2	237	103	340
Totals	340	8,214	6,633	14,847	7,489	5,886	13,375	1,472	89.1	8,744	5,930	14,674

PRIMARY SCHOOLS.

Abstract of Semi-Annual Returns, July, 1873.

DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 yrs.	Over 8 yrs.	Whole No. at date.
		Boys.	Girls.	Total.	Boys.	Girls.	Total.					
Adams	9	312	103	415	286	94	380	35	91.1	231	189	420
Bigelow	13	336	235	571	311	219	530	41	92.0	374	190	564
Bowditch . . .	8	128	125	253	118	114	232	21	90.6	211	97	308
Bowdoin . . .	11	198	189	387	176	170	346	41	88.1	264	160	424
Boylston . . .	6	157	125	282	149	117	266	16	94.0	214	80	294
Brimmer . . .	12	211	206	417	195	184	379	38	90.5	294	156	450
Chapman . . .	10	273	174	447	251	157	408	39	90.7	307	163	470
Comins	17	455	473	828	416	335	751	77	90.5	547	306	853
Dearborn . . .	18	453	393	846	403	334	737	109	87.3	550	356	906
Dorchester . .	21	502	441	943	442	375	817	126	86.7	606	406	1012
Dwight	6	154	146	300	141	135	276	24	91.9	206	123	329
Eliot	16	408	248	656	379	230	609	47	92.7	423	228	656
Everett	10	285	249	534	265	226	491	43	91.0	325	251	576
Franklin . . .	6	141	117	258	132	107	239	19	90.8	158	96	254
Hancock . . .	19	358	389	747	338	361	699	48	93.0	514	248	762
Lawrence . . .	12	526	...	526	509	...	509	17	95.8	340	235	575
Lewis	10	258	219	477	234	192	426	51	88.5	298	203	501
Lincoln	11	345	240	585	322	220	542	43	91.6	314	291	605
Lyman	8	224	128	352	208	118	326	26	92.5	238	145	383
Mayhew	7	175	78	253	153	67	220	33	86.5	158	120	278
Norcross . . .	14	173	457	630	167	434	601	29	94.8	517	229	746
Phillips	7	147	87	234	129	81	210	24	90.4	149	113	262
Prescott	10	260	231	491	237	207	444	47	90.2	306	216	522
Quincy	10	193	166	359	177	154	331	28	92.1	254	139	393
Rice	13	296	263	559	272	236	508	51	90.5	313	191	504
Sherwin	13	304	287	591	282	269	551	40	93.0	392	203	595
Shurtleff . . .	14	372	311	683	342	278	620	63	90.0	469	241	710
Washington . .	8	150	155	305	138	135	273	32	89.5	229	96	325
Wells	12	242	251	493	223	234	457	36	92.2	356	178	534
Winthrop . . .	9	152	158	310	141	142	283	27	90.6	232	90	322
Totals	340	8,188	6,544	14,732	7,536	5,925	13,461	1,271	90.9	9,794	5,739	15,533

PRIMARY SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each District, January 31, 1873.

SCHOOLS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. July, 1870.	Five years.	Six years.	Seven years.	Eight years.	Nine years and over.
Adams . .	51	95	71	68	53	76	414	43	80	86	75	130
Bigelow . .	99	98	101	92	86	107	583	78	139	157	115	94
Bowditch .	49	42	49	43	34	58	275	52	76	53	50	44
Bowdoin .	58	93	56	54	44	86	391	42	87	88	89	85
Boylston .	47	41	53	46	40	53	280	48	73	80	50	29
Brimmer .	61	60	72	72	68	80	413	55	97	118	78	65
Chapman .	50	55	73	62	73	124	437	66	126	116	70	59
Comins . .	145	110	184	113	98	202	852	95	207	212	150	188
Dearborn .	141	137	113	97	100	198	786	109	160	149	179	189
Dorchester	232	147	159	111	87	109	845	62	164	211	192	216
Dwight . .	56	54	44	54	51	56	315	41	74	77	75	48
Eliot . . .	81	95	96	87	82	130	571	85	132	149	94	111
Everett . .	89	80	80	100	101	129	579	82	114	127	132	124
Franklin .	40	41	44	48	38	50	261	34	53	73	64	37
Hancock .	92	108	86	114	123	147	665	117	154	160	112	122
Lawrence .	90	83	86	81	93	123	556	76	106	116	128	130
Lewis . . .	86	106	75	67	81	106	521	42	109	135	130	105
Lincoln . .	85	88	92	88	111	125	589	54	123	142	144	126
Lyman . .	71	50	46	53	48	92	360	42	96	85	77	60
Mayhew . .	39	47	41	44	34	58	263	37	53	58	48	67
Norcross .	99	95	94	93	95	158	634	110	129	154	104	137
Phillips . .	49	44	40	34	22	43	232	31	42	47	35	77
Prescott . .	43	72	96	65	57	139	472	72	96	103	80	121
Quincy . .	59	66	60	47	59	66	357	47	82	99	61	68
Rice	102	72	84	82	71	174	585	89	106	124	131	135
Sherwin . .	87	62	98	62	129	156	594	79	161	145	112	97
Shurtleff .	106	104	93	100	100	188	691	88	148	187	147	121
Washington	58	68	44	40	59	64	333	42	85	87	60	59
Wells . . .	85	68	61	77	84	105	480	82	102	113	122	61
Winthrop .	72	42	56	17	79	74	340	49	76	112	76	27
Totals . .	2,422	2,318	2,347	2,111	2,200	3,276	14,674	1,949	3,250	3,563	2,980	2,932

PRIMARY SCHOOLS.

Table showing the number of Pupils in each Class, the number of the different ages, and the whole number in each District, July, 1873.

DISTRICTS.	First Class.	Second Class.	Third Class.	Fourth Class.	Fifth Class.	Sixth Class.	Whole No. July, 1870.	Five years.	Six years.	Seven years.	Eight years.	Nine years and over.
Adams . . .	58	74	71	66	57	94	420	52	76	103	80	109
Bigelow . . .	90	98	104	92	85	95	564	73	144	157	116	74
Bowditch . .	44	41	52	30	51	90	303	74	82	55	61	36
Bowdoin . .	82	82	42	59	49	110	424	70	88	106	72	88
Boylston . .	41	46	55	48	40	64	294	50	76	88	59	21
Brimmer . .	78	68	77	73	71	83	450	75	105	114	83	73
Chapman . .	63	62	70	58	94	123	470	67	119	121	90	73
Comins . . .	112	164	121	101	176	179	853	127	216	204	163	143
Dearborn . .	136	142	125	121	176	206	906	168	195	185	171	187
Dorchester .	176	163	139	154	129	251	1,012	189	198	219	202	204
Dwight . . .	54	54	48	52	53	68	329	49	74	83	69	54
Eliot	92	97	102	108	103	154	656	89	153	186	119	109
Everett . . .	83	84	83	92	103	131	576	78	119	128	137	114
Franklin . .	39	38	43	33	45	56	254	43	54	61	63	33
Hancock . .	97	117	100	128	154	166	762	143	208	163	112	136
Lawrence . .	95	88	88	88	76	140	575	99	126	115	130	105
Lewis	77	89	75	68	56	136	501	61	109	128	130	73
Lincoln . . .	92	84	93	96	111	129	605	46	115	153	160	131
Lyman . . .	67	55	56	48	47	110	383	62	94	82	72	73
Mayhew . . .	46	42	42	47	39	62	278	45	48	65	58	62
Norcross . .	116	66	55	164	105	240	746	143	206	168	98	131
Phillips . . .	42	62	38	34	26	60	262	41	51	57	45	68
Prescott . .	67	79	74	63	98	141	522	74	120	112	102	114
Quincy . . .	58	69	57	61	43	105	393	61	98	95	76	63
Rice	70	46	86	92	84	126	504	92	97	124	96	95
Sherwin . . .	81	57	97	67	125	168	595	91	159	142	111	92
Shurtleff . .	99	100	95	106	159	151	710	113	168	188	130	111
Washington .	66	48	38	41	56	76	325	64	78	87	60	36
Wells	90	67	62	77	109	129	534	136	99	121	101	77
Winthrop . .	67	35	25	51	62	82	322	67	72	93	67	23
Totals . .	2,378	2,317	2,213	2,318	2,582	3,725	15,533	2,542	3,547	3,703	3,033	2,708

PRIMARY SCHOOLS — DORCHESTER.

Abstract of Semi-Annual Returns, January 31, 1873.

SUB-DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole number at date.
		Boys	Girls	Total	Boys	Girls	Total					
Everett	3	84	65	149	71	52	123	26	81.7	57	83	140
Gibson	3	59	52	111	50	43	93	18	82.8	53	58	111
Harris	3	57	64	121	50	54	103	17	85.8	71	65	136
Mather	3	72	70	144	60	56	116	26	80.8	86	57	143
Minot	4	96	89	185	84	74	158	27	84.5	84	80	164
Stoughton . .	3	75	57	132	68	49	117	15	91.8	62	60	122
Tileston . . .	1	10	13	23	9	12	21	2	89.7	24	5	29
Totals . . .	20	453	410	853	392	340	732	128	85.3	437	408	84

PRIMARY SCHOOLS — DORCHESTER.

Abstract of Semi-Annual Returns, July, 1873.

SUB-DISTRICTS.	Schools.	Average whole number.			Average Attendance.			Average Absence.	Per cent. of Attendance.	Between 5 and 8 years.	Over 8 years.	Whole number at date.
		Boys	Girls	Total	Boys	Girls	Total					
Everett	4	111	79	190	98	66	164	26	85.8	97	65	162
Gibson	3	60	59	119	52	50	102	17	85.8	68	63	131
Harris	3	65	72	137	58	63	121	16	88.3	98	56	154
Mather]	3	66	66	132	56	54	110	22	82.9	111	62	173
Minot	4	106	91	197	95	75	170	27	86.5	118	72	190
Stoughton . .	3	82	62	144	72	55	127	17	88.7	90	82	172
Tileston . . .	1	12	12	24	11	12	23	1	94.0	24	6	30
Totals . . .	21	502	441	943	442	375	817	126	86.7	606	406	1012

CLASSIFICATION OF PRIMARY SCHOOLS, JULY, 1873.

DISTRICTS.	SCHOOLS HAVING						1st Class only.	6th Class only.
	One Class.	Two Classes.	Three Classes.	Four Classes.	Five Classes.	Six Classes.		
Adams	6	3	...	...	...	...	...	2
Bigelow	12	...	...	1	...	...	2	2
Bowditch	7	1	...	...	...	...	1	2
Bowdoin	1	6	3	...	...	1	...	1
Boylston	...	6	...	...	...	...	...	...
Brimmer	9	2	...	...	1	...	2	2
Chapman	8	2	...	...	...	...	1	2
Comins	9	3	4	...	...	1	1	2
Dearborn	16	2	...	...	...	...	3	3
Dwight	6	...	...	...	...	...	1	1
Eliot	13	...	2	...	...	1	2	3
Everett	8	2	...	...	...	...	1	2
Everett (Dorchester)	2	1	1	...	...	...	1	1
Franklin	6	...	...	...	...	...	1	1
Gibson	...	...	2	1	...	...	...	...
Hancock	2	14	2	...	...	1	...	1
Harris	...	3	...	...	...	...	...	...
Lawrence	10	1	1	...	...	...	2	2
Lewis	1	3	6	...	...	...	...	1
Lincoln	8	2	...	...	...	1	1	2
Lyman	7	...	...	1	...	...	1	2
Mayhew	...	3	1	3	...	...	...	...
Mather	...	3	...	...	...	...	...	...
Minot	...	3	...	1	...	...	...	...
Norcross	10	2	...	2	...	...	2	2
Phillips	...	3	2	2	...	...	...	...
Prescott	3	6	1	...	...	...	...	2
Quincy	9	1	...	...	...	...	2	2
Rice	11	1	...	...	1	...	1	3
Sherwin	5	7	...	...	...	1	...	3
Shurtleff	14	...	...	...	...	...	2	3
Stoughton	...	2	1	...	...	...	...	...
Tileston	...	...	...	...	...	1	...	...
Washington	3	5	...	...	...	...	2	1
Wells	10	1	1	...	...	...	2	2
Winthrop	7	2	...	...	...	...	1	2
Totals	203	90	27	11	2	7	32	52

SCHOOL CENSUS.

Table showing the number of children in each Ward between five and fifteen years of age, and the number at school, May, 1873, as reported by the census-taker.

WARDS.	Children between 5 and 15.	Attending Public Schools.	Attending Private Schools.
1	5,313	3,999	401
2	4,992	3,293	749
3	1,933	1,482	194
4	886	560	157
5	1,481	1,262	16
6	1,457	949	320
7	6,501	4,785	913
8	1,443	1,167	108
9	2,098	1,553	320
10	2,536	2,042	183
11	2,944	2,020	570
12	4,920	3,700	440
13	2,037	1,660	67
14	2,577	1,958	271
15	4,051	3,200	325
16	2,448	2,129	145
Deer Island,	284	275	....
Thompson's Island,	100	....	100
Total,	48,001	36,034	5,279

The following Table shows the number of persons in the city between the ages of five and fifteen, in the month of May, for ten years, and also the amount received by the city, in each year, from the State School Fund:—

YEARS.	Persons between Five and Fifteen Years of Age.	Proportion of Income from School Fund.
1864.....	32,854	\$6,430 63
1865.....	34,902	6,750 44
1866.....	35,225	8,082 08
1867.....	36,030	5,310 30
1868.....	43,109	11,545 13
1869.....	42,624	8,171 38
1870.....	46,301	7,226 79
1871.....	45,970	12,015 14
1872.....	46,144	9,363 24
1873.....	48,001	8,920 19

The following Table shows the average whole number, the average attendance and the per cent. of attendance, of the PUBLIC DAY SCHOOLS, of all grades, for ten years, ending July, 1873:—

YEARS.	Average Whole Number.	Average Attendance.	Per Cent.
1863-64	26,961	24,617	91.6
1864-65	27,095	25,001	93.0
1865-66	27,723	25,809	93.5
1866-67	28,126	26,265	94.0
1867-68	32,885	30,399	92.7
1868-69	33,535	31,126	93.3
1869-70	35,164	32,463	92.3
1870-71	36,174	33,464	92.5
1871-72	36,234	33,502	92.4
1872-73	35,930	33,143	90.9

The following Table shows the aggregate of the average whole number and attendance of the pupils of the HIGH SCHOOLS, for ten years, ending July 31, 1873:—

YEARS.	Average Whole Number.	Average Attendance.	Per cent.
1863-64	527	691	94.5
1864-65	740	712	96.1
1865-66	776	751	96.2
1866-67	873	845	96.7
1867-68	1,050	977	95.7
1868-69	1,064	1,025	95.7
1869-70	1,283	1,230	95.9
1870-71	1,501	1,430	95.2
1871-72	1,640	1,553	93.8
1872-73	1,745	1,648	92.9

The following Table shows the aggregate of the average whole number and attendance of the GRAMMAR SCHOOLS, for ten years, ending July, 1873:—

YEARS.	Average Whole Number.	Average Attendance.	Per cent.
1863-64	13,523	12,601	92.8
1864-65	13,915	13,110	93.8
1865-66	14,394	13,620	94.2
1866-67	14,849	14,026	94.1
1867-68	17,450	16,862	93.3
1868-69	18,043	16,963	93.9
1869-70	19,028	17,807	93.2
1870-71	19,565	18,312	92.3
1871-72	19,760	18,500	92.8
1872-73	19,267	17,973	93.2

The following Table shows the aggregate of the average whole number and attendance of the pupils of the PRIMARY SCHOOLS, for ten years, ending July, 1873.

YEARS.	Average Whole Number.	Average Attendance.	Per Cent.
1863-64	12,713	11,325	87.5
1864-65	12,440	11,179	89.1
1865-66	12,553	11,438	90.3
1866-67	12,405	11,393	91.1
1867-68	14,385	13,060	89.3
1868-69	14,384	13,101	90.4
1869-70	14,739	13,330	90.4
1870-71	14,977	13,614	89.4
1871-72	14,716	13,351	89.8
1872-73	14,790	13,418	90.0

The following Table shows the number of PRIMARY SCHOOLS, the average number and the average attendance at a school, for ten years, ending July, 1873.

YEARS.	Schools and Teachers.	Average No. to a School.	Average Attend. to a School.
1863-64	254	50.0	44.5
1864-65	257	48.4	43.5
1865-66	256	49.0	44.7
1866-67	259	47.8	43.0
1867-68	303	47.4	43.1
1868-69	307	46.8	42.6
1869-70	323	45.9	41.2
1870-71	327	45.8	41.6
1871-72	335	43.9	39.8
1872-73	340	43.5	39.4

ORDINARY EXPENDITURES.

Annual Expenditures for the Public Schools of Boston for the last nineteen financial years, ending 30th of April, in each year, exclusive of the cost of the school-houses; also the average whole number of scholars for each school year ending July, 1873.

Financial Year.	No. of Schola's.	Salaries of Teachers.	Rate per Scholar.	Incidental Ex-penses.	Rate per Scholar.	Total Rate per Scholar.
1854-55..	23,439	\$222,970 41	\$9.51	\$62,950 50	\$2.66	\$12.17
1855-56..	23,749	224,026 22	9.43	67,380 06	2.84	12.27
1856-57..	24,231	225,730 57	9.32	72,037 71	2.97	12.29
1857-58..	24,732	258,445 34	10.45	86,849 27	3.51	13.96
1858-59..	25,453	268,668 27	10.56	86,098 21	3.38	13.94
1859-60..	25,328	277,683 46	10.96	95,985 15	3.79	14.75
1860-61..	26,488	286,835 93	10.82	111,446 31	4.21	15.03
1861-62..	27,081	300,181 28	11.08	108,245 06	4.00	15.08
1862-63..	27,051	310,632 43	11.50	115,641 97	4.27	15.77
1863-64..	26,960	324,698 51	12.04	140,712 56	4.85	16.89
1864-65..	27,095	372,430 84	13.74	180,734 00	6.67	20.41
1865-66..	27,723	403,300 82	14.54	172,520 76	6.22	20.77
1866-67..	28,126	492,796 66	17.52	186,908 85	6.64	24.16
1867-68..	32,885	548,615 90	16.68	224,090 51	6.81	23.49
1868-69..	33,535	719,628 04	21.45	263,048 96	7.84	29.29
1869 70..	35,164	720,960 65	20.50	226,451 95	7.57	28.07
1870-71..	36,174	816,344 66	22.11	315,254 70	8.71	30.82
1871-72..	36,234	863,658 81	23.83	352,920 84	9.74	33.57
72-73..	35,930	929,852 41	25.04	362,620 50	10.09	35.13

TOTAL EXPENDITURES.

Table showing the net TOTAL expenses of the city, for Education, for nineteen years, from May 1, 1854, to April 30, 1873, inclusive.

Financial Year.	Salaries of Teachers.	Incidental Expenses.	Cost of School-houses.	Total Expenditure.
1854-55.....	\$222,970 41	\$62,350 50	\$103,814 73	\$389,135 64
1855-56.....	224,026 22	67,380 06	149,732 80	411,139 08
1856-57.....	225,730 57	72,037 71	51,299 26	349,067 54
1857-58.....	258,445 34	86,849 27	225,000 00	570,294 61
1858-59.....	268,668 27	86,098 21	105,186 42	459,952 90
1859-60.....	277,683 46	95,985 15	144,202 67	517,871 28
1860-61.....	286,835 93	111,446 31	230,267 04	628,549 28
1861-62.....	300,181 28	108,245 06	166,181 50	574,567 84
1862-63.....	310,632 43	115,641 97	107,812 74	534,087 14
1863-64.....	324,698 51	140,712 56	5,870 87	471,281 94
1864-65.....	372,430 84	180,734 00	90,609 84	643,774 68
1865-66.....	403,300 82	172,520 76	200,532 64	776,375 22
1866-67.....	492,796 66	186,908 85	101,575 09	781,280 60
1867-68.....	548,615 90	224,090 51	188,790 80	961,497 51
1868-69.....	719,628 04	263,048 96	346,610 78	1,329,287 78
1869-70.....	720,960 65	266,451 95	612,337 86	1,599,750 46
1870-71.....	816,344 66	315,254 70	443,679 71	1,575,279 07
1871-72.....	863,658 81	352,920 84	97,800 68	1,314,380 33
1872-73.....	929,852 41	362,620 50	454,230 34	1,746,703 25

REPORT
OF
SCHOOL COMMITTEE
ON
DRAWING.

REPORT.

June 10, 1873. *Ordered*, That the Committee on Drawing be allowed to report in print.

ANNUAL REPORT.

In respectfully submitting the following report, the Drawing Committee have great pleasure in stating that the past year has been one of progress in the department under their charge. This is in a great measure due to the systematic course of instruction laid down in the accepted programme, which was prepared by the General Supervisor, submitted for approval, and printed in the last Annual Report.

During the short time that it has been in operation, it has fulfilled the expectations of those who saw in its application an assurance of solid improvement. Its efficiency was proved by the excellence of many of the drawings shown at the late Exhibition, and its thoroughness by their graduation from the lowest classes to the highest. With these early proofs of excellence, it cannot be doubted, that when sufficient time shall have elapsed to allow its workings to be fully felt, its value will be more appreciated.

The programme has been fully carried out with but one important exception, namely, the study of Practical Geometry, which, being the basis of Industrial Drawing, is a marked feature of the present system of instruction. We are, therefore, happy to be assured that the want of compasses for the use of pupils in the High Schools, and the higher classes of the Grammar Schools, which has hitherto prevented them from entering upon it, will shortly be supplied.

The most striking feature of the new system, whose aim is to teach the use of lines and to give a mastery over the elements of form to all, is its progressive character. It contemplates some new steps in advance with each successive year. Thus, for example, while instruction was last year given to the normal classes in Free-hand, Model, and Memory Drawing, in which subjects nearly 500 teachers submitted to a voluntary examination, the successful candidates have this year studied the more advanced subjects of Geometrical Drawing, Linear Perspective, Dictation Drawing and Design, while those who did not attend the first year's course, or who failed to pass an examination, have attended a special class at the Girls' High School, where the first year's course of lessons has been repeated for their benefit.

The General Supervisor has given normal instruction in Perspective, and in Model Drawing and Designs, on alternate Wednesdays, at the Starr King and the Appleton-street schools, and his lessons have been repeated by Messrs. Hitchings and Barry to those teachers who, for lack of room, or inability to attend the opening lessons, would have otherwise

been unable to follow the whole course. The growth of interest amongst the teachers is proved by the fact that while 500 only attended the lessons last year, 620 have this year availed themselves of the privilege. As in the normal classes, so in those of the High and Grammar Schools, several new subjects have been introduced, such as drawing from solid models and the practice of original design, by which the pupils are brought to combine elementary geometrical and plant forms into patterns approaching in character to those used for wall-papers, calicoes, and similar articles of manufacture. This admirable exercise compels the pupil to think, to remember, to call upon his inventive faculties, and teaches him the value of symmetry and harmony as resulting from repetition, balance of parts, and continuity. The high average of excellence in the original designs made for the Vienna Exhibition by pupils of the High, and of some of the Grammar Schools, was pointed out in the last Quarterly Report of the Drawing Committee. Further opportunity of estimating the remarkable inventive ability of the youth of New England, as represented in the Public Schools, was afterwards furnished by the specimens of their work sent to the Annual Exhibition, which was held at Horticultural Hall during the last week in the month of May.

The Drawing Committee would ask your special attention to the success attained in this branch of Drawing, as it warrants the reasonable hope that Massachusetts will eventually take a high stand among her sister States through the application of

Art to Industry. Those who believe that it is only through such means that she can in the future retain her hitherto undisputed position as a leading manufacturing State will rejoice in these conclusive proofs of native aptitude for original design.

In a late letter addressed to the Committee on Drawing by the General Supervisor, he thus expresses his general satisfaction at the actual condition of the schools in his department:—

“Whatever progress may be annually made in the future under the present scheme, which has been but a short time in operation, there will never be a time when it will be greater than it has been during the past year. From the monotonous drawing of one subject from flat copies in drawing-books, the pupils have advanced to the study of five subjects in every class, and some of the classes include in that number the exercise of original design. The variety of the subjects prevents the study of Drawing from becoming monotonous, and in the character of the exercises, such as memory, dictation drawing and design, every faculty of the mind is brought into gentle but wholesome operation. Every teacher in the Public Schools, to whom I have spoken on the subject, informs me that Drawing is now infinitely more interesting to the pupils than it used to be; and that is quite sufficient to account for the fact that it is much better done.” The highly favorable opinion here expressed by Mr. Walter Smith, whose wide experience and knowledge should render him eminently qualified to judge correctly, is most encouraging.

The excellent condition of things, of which he

assures us, is not only due to the special instructors, but also, in a great measure, to the regular teachers, whose ability to give elementary instruction in Drawing has been generally proved during this year. No one who was aware of their previous success in giving elementary instruction in Music could doubt that their efforts in this new direction would be equally rewarded. The added responsibility and increase of work entailed upon them may at first have seemed too great to some of their number, but the fact that many had been equally doubtful in the beginning as to their ability to teach Music, sustained the belief that in this case they would also find themselves mistaken ; and such we are happy to state is the result. So far from interfering with the successful giving or receiving of instruction in other branches of study, Music and Drawing appear to be of great assistance to teachers and pupils ; for the relaxation which they afford to both is followed by a more vigorous application to work of a different character. The testimony of some of the most accomplished among the masters substantiates this belief. Thus, the master of a large Grammar School lately annexed to Boston, remarked to a member of the Drawing Committee, "Although we have one school hour less than before the annexation, and these two studies more, I have seen no falling off in other studies, but, on the contrary, a decided advance."

This is not the place to discuss the importance of musical instruction in the Public Schools, and the subject has only been touched upon here in order to illustrate the equal importance of a kindred branch

of study, which, though much more recently introduced, has now fairly begun to give equally strong evidence of its claims upon public interest, by the attainment of equally satisfactory results. While crowds filled the Music Hall to listen with delight to the excellent choral singing of the school children, other crowds examined with equal interest and gratification the proofs of their proficiency in Drawing exhibited at the Horticultural Hall, nor can it be doubted, that the greater part of those who were thus convinced, through their ears and eyes, of the great results already obtained, withdrew with the full conviction that these were more than commensurate with the sacrifices made to obtain them.

The conditions which regulated the last annual exhibition of drawings were very different from those of the preceding year. Then the work of each school was grouped separately under its name, and the public was thus enabled to institute comparisons which, however apparently just, tended to excite jealousy and hostile feeling. As no one could tell whether the superior quality of the work exhibited from certain schools was due to the greater capacity of the pupils, or had been reached by the taking of extra hours for Drawing which ought to have been given to other studies, it cannot be denied that grounds existed for the dissatisfaction freely expressed by those masters who, after strictly confining work in their schools to the hours appointed for it, found themselves distanced by others, of a less conscientious nature, who, wishing to excel, had permitted Drawing to be practised out of time.

Such at least was the accusation made in certain cases, to account for a superiority which may have been perfectly legitimate; but, whether so or not, a great deal of feeling existed. It therefore seemed more judicious to arrange the work of the schools in three groups, viz., Primary, Grammar, and High. By this mode of exhibition, all risk of rousing jealous feelings was avoided.

In accordance with the regulations prescribed by the Drawing Committee no drawings but those made by the pupils at regular hours were admitted to the exhibition. Whole books, which could be examined on every page, and rows of pages, displaying the same subject, were placed upon the stands, and the public had thus an opportunity of judging how each subject was taught, and of learning something as to the general system pursued in the Public Schools. The drawings selected to illustrate this report were chosen with great care, as it was felt that it would be a record of the present condition of Drawing in the schools, and that they would serve as a standard of comparison by which future progress could be estimated.

The committee desire to take this opportunity of thanking Messrs. Osgood and Co. for their liberality in furnishing, at a merely nominal cost to the city, one thousand copies of these heliotyped drawings, which give a highly practical value to their report. They represent every subject taught in the day and evening schools, and every kind of work, excepting black-board and slate drawing, as practised in the lower classes of the Primary Schools. The drawings from casts and the original designs fully bear out the favor-

able estimate already expressed as to the capacity of the pupils for this branch of study.

So much has incidentally been said about the subjects taught, and the character of the instruction given in the Public Schools, that it will not be necessary to repeat it in detail under separate heads, especially as the programme can be referred to for more precise information; but we cannot pass on to the consideration of the free evening drawing classes without saying that the want of flat copies and models for study in the High Schools is very much felt. A sum of money was appropriated last year to supply this want, and the objects sent for to England are daily expected. The geometrical models and solid forms obtained for the Grammar Schools have been of much use; but here the want of compasses, which has already been pointed out, has prevented the important study of practical geometry.

The special instructors and supervisors, Messrs. Hitchings, Barry, Nutting, Miss Bailey, with Mr. Clark as assistant in the English High School, have taught in the High Schools and in the Normal School, and have supervised the teaching given by the regular teachers in the Grammar and Primary Schools.

An examination of the day schools in Free-hand and Memory Drawing, and of the evening schools in Freehand and Model Drawing, was held by the General Supervisor in the month of May, and of the normal classes in Free-hand, Model, Memory, Geometrical and Perspective Drawing in the month of June. The tables appended to this report show the highly satis-

factory results obtained in the examination of the normal art classes, and the free evening classes.

FREE INDUSTRIAL EVENING CLASSES.

These classes have been held during the past winter at the Appleton street, Tennyson street, and Mason street Schools, and at the Dorchester High School. At Appleton street, instruction was given in Cast Drawing by Mr. Bartlett, with most excellent results. Many really remarkable drawings, considering the want of sufficient accommodation, and the defective system of lighting, were contributed to the exhibition by the pupils, whose number was limited only by the want of room. The classes in Free-hand Drawing, conducted by Mr. Furneaux and Mr. Morse, in the large room at the same school, were fully attended, and many of the pupils' works, as the awards made by the State Board of Examiners at the exhibition show, were worthy of high commendation. Accommodation for the classes in Instrumental Drawing, the want of which occasioned a considerable loss of time in the beginning of the season, was afterwards given at the Starr King School. Here the rooms were most admirably lighted, and supplied with desks and tables perfectly fitted to the needs of the students. Instruction was given by Messrs. Willard, Paul, Ward, Young and Frisbee in Mechanical and Architectural Drawing, Isometric Projection, and in Ship-Draughting. The work of the pupils in these different branches, which was exhibited at the Horticultural Hall, gave evidence of the care with which they had been taught, and the diligence with which they had persevered in

their studies. The drawings made by Mr. Frisbee's class in Ship Draughting were, unfortunately, not sent to the exhibition in time; and this is especially to be regretted, as many of them were highly creditable to both master and pupils.

Of the two new schools opened by us during the winter, the one at Dorchester, though it was only for a short time in operation, produced some very good work, and was so well attended as to convince the Drawing Committee of the desirability of multiplying such branch schools, in order to meet the wants of persons residing at great distances from the city schools proper. East Boston and Boston Highlands are both localities where evening schools could be opened to great advantage, and with the slight additional expense of lighting the necessary rooms. The other new class opened at the evening High School in Mason street, under the able direction of Mr. Damon, is cited in the report of the State Board of Examiners as an evidence "of the great advantage to be derived from the study of geometry, for which the pupils have enjoyed special advantages." In looking back over the work done during the past year, and in summing up its history, the committee feel that there is reason for great satisfaction. They do not pretend that all is as it should be, but they consider what has been done as a guaranty that it will eventually become so.

A State Normal Art Training School, which was greatly needed, to supply the crying want of suitably trained instructors felt by the State, is shortly to be opened in Boston.

In the mean time the capacity, zeal and diligence

of the special instructors now employed is such as to call for high commendation.

Under the conscientious direction of the General Supervisor, with whom they work in perfect harmony, and encouraged in their work by the good will and evident interest of the pupils, the special instructors and the regular teachers are laying deep and strong foundations, upon which we may securely build for the future. That no disturbing influence may be allowed to interfere with the progress of the work so well commenced, and that such obstacles as exist at present may be speedily removed, is our earnest wish.

Respectfully submitted,

CHARLES C. PERKINS,
ROBERT C. WATERSTON,
GEORGE F. BIGELOW,
JAMES MORSE,
WILLIAM WOODS,
JAMES WALDOCK,
J. C. J. BROWN,

} *Committee.*

ILLUSTRATIONS OF THE DRAWING BEING TAUGHT
IN PRIMARY SCHOOLS.

The subjects of study illustrated from the Primary Schools are : —

1. Drawing from the Blackboard or flat Copies.
2. Drawing from Dictation.
3. Drawing from Memory ; 2 examples.
4. Original Design.

In addition to these subjects, the definitions of plane geometry are committed to memory, and drawings made to illustrate them. The subjects of instruction are the same in all the classes of the Primary Schools, the classes 6, 5 and 4 drawing upon slates only ; whilst classes 3, 2 and 1 draw upon paper also. The examples given are graduated to the powers of the classes, though as a principle the exercises of the three higher classes are repetitions upon paper of similar work done in the lower classes on slates, or variations of the same exercises.

ILLUSTRATIONS OF THE DRAWING BEING TAUGHT
IN GRAMMAR SCHOOLS.

The illustrations from the works of the Grammar Schools comprise the following subjects : —

1. Drawing from Copies or Blackboard.
2. Drawing from Dictation.
3. Drawing from Memory ; 2 examples.
4. Model Drawing from Blackboard or Copies ; 4 examples.
5. Model Drawing from the Solid ; 3 examples.

6. Map-Drawing from Memory.
7. Original Designs ; 15 examples.

The subject of Plane Geometrical Drawing is also a part of the Grammar School course, but owing to the lack of compasses for use in the Grammar Schools, it has not been taught generally during the past year. The aim has been to have three branches of Drawing taught in each class, that the pupils might have one lesson a week in each subject, and this has been found to be both more interesting and more instructive than to limit the instruction to one subject. When the scheme is fully in operation, there will be five branches of Drawing taught in each Grammar class.

ILLUSTRATIONS OF THE DRAWING BEING TAUGHT IN
THE LATIN, HIGH AND NORMAL SCHOOLS.

The works from the High Schools consist of : —

1. Landscape Shading.
2. Flower Shading.
3. Model Shading from Objects ; two examples.
4. Figure Shading.
5. Machine Drawing.
6. Architectural Drawing.

In addition to these subjects, Geometrical Drawing has been taught in the lower classes, and tinting in color in some of the advanced. The individual tastes and requirements of the pupils have been consulted as to the branches of art study it is most profitable for them to pursue ; and as higher skill becomes manifested by the entering pupils from the Grammar

Schools, a still wider diversity of subject may be attained.

It has been somewhat difficult to comply with every feature of the scheme adopted by the committee, from the want of previous preparation in the lower classes, which the scheme supposes. This difficulty will be removed in time, and every removal of the pupil into higher classes in the future will enable the teachers to have scholars already prepared for their work.

ILLUSTRATIONS OF THE DRAWING BEING TAUGHT IN THE NIGHT CLASSES.

The evening class work is represented by the following works: —

1. Outline Drawing from Copy.
2. Model Shading from Solid.
3. Free-hand Shading from Copy.
4. Free-hand Shading from Cast.
5. Free-hand Figure Shading from Copy.
6. Free-hand Figure Shading from Cast.
7. Machine Drawing.
8. Architectural Drawing.
9. Ship Draughting.

Specimens of Drawings from the Public Schools,

SELECTED AT THE ANNUAL EXHIBITION, HORTICULTURAL HALL, MAY, 1873.

Drawings from Primary Schools.

<i>Subject.</i>	<i>Class.</i>	<i>Plate No.</i>
Drawing from Copies, Blackboard	1 }	1
Dictation	1 }	
Memory	2 }	2
“	1 }	
Design	1	3

Drawings from Grammar Schools.

<i>Subject.</i>	<i>Class.</i>	<i>Plate No.</i>
Drawing from Copies, Blackboard	5 }	4
Memory Drawing	5 }	
“ “	5 }	
Dictation “	5 }	
Model Drawing from Copies, or Blackboard	3 }	5
“ “ “	3 }	
“ “ “	1 }	
“ “ “	1 }	
Model Drawing from the Solids	1 }	6
“ “ “	1 }	
“ “ “	1 }	
Map Drawing from Memory	1	7
Original Design	3 }	8
“ “	3 }	

Drawings from Grammar Schools. — Continued.

<i>Subject.</i>	<i>Class.</i>	<i>Plate No.</i>
Original Design	1 }	9
“ “	3 }	
“ “	1 }	10
“ “	2 }	
“ “	1 }	11
“ “	1 }	
“ “	1 }	
“ “	3 }	
“ “	1 }	12
“ “	1 }	
“ “	1 }	13
“ “	1 }	

Drawings from High Schools.

<i>Subject.</i>	<i>Class.</i>	<i>Plate No.</i>
1. Model Shaded from Solid	Senior . . .	14
“ “	First	15
2. Flower Shading	Senior . . .	16
3. Landscape Shading	First	17
4. Figure Shading	Second . . .	18
5. Machine Drawing	Advanced . .	19
6. Architectural Drawing	“	20

Drawings from the Night Classes.

<i>Subject.</i>	<i>Name of Pupil.</i>	<i>Age</i>	<i>Class.</i>	<i>School.</i>	<i>Plate No.</i>
1. Outline Drawing from Copy		18	Freehand Elementary .	Appleton St.	21
2. Model Shading from Solid		24	Advanced . .	"	22
3. Freehand Shading from Copy		14	Elementary .	"	23
4. Freehand Shading from Cast		23	Advanced . .	"	24
5. Freehand Shading of Figure		23	Elementary .	"	25
6. Do. from Copy, do. Human figure from Cast		25	Advanced . .	"	26
7. Machine Drawing		15	Mechanical .	Starr King . .	27
8. Architectural		25	Architectural	Evening High	28
9. Ship-draughting		25	Ship-draught'g	Starr King . .	29

SECOND GRADE.

Annual Examination in Freehand, Model, Memory, Geometrical, and Perspective Drawing.—1873.

CITY OF BOSTON.—NORMAL ART CLASSES.

* Signifies that the teacher passed the examination.

† Signifies that the teacher also passed the examination in 1872, in Freehand, Model and Memory Drawing.

— This mark signifies that the teacher did not sit for the examination, or did not pass it.

<i>Name.</i>	<i>School.</i>	<i>Freehand.</i>	<i>Model.</i>	<i>Memory.</i>	<i>Geometry.</i>	<i>Perspective.</i>
Avery, H. W.	Girls' High	*	*	*	*	*
Adams, E.	Winthrop	—	—	*	*	*
† Allison, M. J.	Girls' High	—	—	—	*	*
Aldrich, R. N.	Ticknor	*	—	—	—	—
Austin, A. C.	Mather	*	—	—	—	—
† Baker, M. A.	Tileston	—	—	—	*	*
Barnes, S. H.	Bigelow	—	—	—	*	*
Brown, E. Q.	Gibson	—	—	—	*	*
† Bartlett, M. A.	Prescott	—	—	—	*	*
Brigham, A. L.	Cambridge High	—	—	—	*	*
† Bowler, E. F.		—	—	—	—	*
† Bense, J. A.	Harris	—	—	—	*	*
Baker, E. J.	Winthrop	—	—	—	*	—
† Blacker, E. F.	Shurtleff	—	—	—	*	*
† Boynton, E. P.	Harris	—	—	—	*	*
Bartlett, L. C.	Bigelow	—	—	—	—	*
Boothby, H. E.	Starr King	—	*	—	—	*
Badger, M. A.	Girls' High	*	*	*	*	*
† Buckingham, L. H.	English High	—	—	—	*	*
† Bunker, A.	Comins	—	—	—	*	—
Bowerie, S. E.	Appleton Street	*	—	—	—	—
Bailey, A. A.	Ticknor	*	*	*	—	—
Bailey, E. H.	Mather	*	—	*	—	—
Beckler, C. M.	Rice	*	—	*	—	—
Ballard, G. A.	Rice	*	—	—	—	—
Bancroft, S. B.	Comins	—	—	*	—	—
Bolman, H. M.	Boylston	—	—	*	—	—
† Brackett, C. M.	Comins	—	*	—	—	—

Annual Examination.—Continued.

<i>Name.</i>	<i>School.</i>	<i>Freehand.</i>	<i>Model.</i>	<i>Memory.</i>	<i>Geometry.</i>	<i>Perspective.</i>
Boris, E. E.	Sherwin	—	—	*	—	—
† Burgess, L. L.	“	—	*	—	—	—
† Bailey, M. L.	Dean Street	—	—	*	—	—
† Baker, A. L.	Eustis Street	—	*	—	—	—
Beckler, M. L.	Rice	—	*	—	—	—
† Bird, L. H.	Winthrop	—	*	*	—	—
† Bird, E. L.	“	—	*	*	—	—
† Bird, L. W.	Brimmer	—	*	*	—	—
Bowers, S. E.	Appleton Street . .	—	*	*	—	—
† Cook, C. E.	Stoughton	—	—	—	*	*
† Cummings, M. A.	Comins	—	—	—	—	*
† Carter, M. S.	Wells	—	—	—	*	*
† Clark, A. E.	Comins	—	—	—	*	*
Critchett, A. J.	Prescott	*	*	*	*	*
Curtis, L.	Lincoln	—	—	—	*	—
Casey, J. F.	English High	*	*	*	*	*
† Clapp, H. L.	Lawrence	—	—	—	*	*
Colomy, E. F.	Tileston	*	*	*	*	—
† Cummings, M. L.	Comins	—	—	—	*	*
† Crozier, C. S.	Winthrop	—	—	—	*	*
Caryl, H. E.	Girl's High	*	*	*	*	*
Chamberlain, M. D.	Lewis	*	*	*	—	—
Cudworth, A. M.	Lyman	*	—	—	—	—
Cartie, A. B.	Sherwin	*	*	*	—	—
Cook, S. A.	Adams	*	*	*	—	—
Cumston, C. H.	English High	*	*	*	—	—
Carleton, A. C.	Ticknor	*	—	*	—	—
Carpenter, E. F.	Dwight	*	*	—	—	—
Cherrington, J. B.	Bigelow	—	*	—	—	—
Drowne, E. R.	Prescott	*	—	*	*	*
De Merritt, B. A.	“	—	—	—	*	*
Day, M. D.	“	—	—	—	*	*

Annual Examination.—Continued.

<i>Name.</i>	<i>School.</i>	<i>Freehand.</i>	<i>Model.</i>	<i>Memory.</i>	<i>Geometry.</i>	<i>Perspective.</i>
† Davis, M. A.	Boylston	—	—	—	—	*
Dudley, L. A.	Dearborn	—	—	—	*	*
† Dodge, K. L.	Eliot	—	—	—	*	*
Dimick, O. W.	Chapman	—	—	—	*	*
Dayley, F. I.	Lyman	*	*	*	—	—
† Davis, L. E.	Comins	*	—	—	—	—
Drew, F. H.	Prescott	—	—	*	—	—
Emery, I. F. P.	Minot	—	—	—	*	*
† Eliot, E. B.	Lewis	—	—	—	*	—
† Evert, E. M.	Bowditch	—	—	—	*	*
† Emery, T. I.	English High	—	—	—	*	*
† Endicott, W. E.	Gibson	—	—	—	*	*
Ellis, F. O.	Bigelow	*	*	*	*	*
† Eliot, C.	Lewis	—	—	*	—	—
Etheridge, C. L.	Dorchester Everett .	—	*	*	—	—
Fisher, E. S.	Tileston	—	—	—	*	*
Folsom, E. M.	Girls' High	*	*	*	*	*
† Ford, M. A.	Prescott	—	—	—	*	*
† Foster, S. S.	Everett	—	—	—	*	*
† Fay, E. A.	Bowdoin	—	—	—	*	*
† Fisher, A. E.	Minot	—	—	—	*	*
† Foster, M. M.	Prescott	—	—	*	*	*
† Fisher, E. G.	Dorchester High . .	—	—	—	*	*
Fraser, H. M.	Hancock	—	*	*	—	—
† Ford, A. W.	Dorchester Everett .	—	—	*	—	—
Fisher, A. M.	"	—	*	—	—	—
† Gilbert, A. M.	Harris	—	—	—	*	*
† Gragg, C. A.	Comins	—	—	—	*	*
† Gray, F.	Girls' High	—	—	—	*	*
Gleason, E. L.	Atherton	*	—	*	—	—
Hale, A.	English High	—	—	—	*	*
Horne, E. L.	Mather	—	—	—	—	*

Annual Examination. — Continued.

<i>Name.</i>	<i>School.</i>	<i>Freehand.</i>	<i>Model.</i>	<i>Memory.</i>	<i>Geometry.</i>	<i>Perspective.</i>
† Hearsey, S. E.	Harris	—	—	—	*	*
† Horne, E. T.	"	—	—	—	*	*
† Howe, E. L.	Gibson	—	—	—	*	*
† Halliday, M. C.	Hancock	—	—	—	*	*
Hall, G. W. M.	Mayhew	*	*	*	*	—
Hintz, W. B.	Normal	*	*	*	—	—
Holbrook, L. B.	Girls' High	*	*	*	—	—
Hitchings, H. M.	Hancock	*	*	*	—	—
Hayes, P. G.	Comins	*	*	*	—	—
Haskell, E. B.	Bigelow	*	*	—	—	—
Hazell, L. W.	Prescott	*	—	*	—	—
† Halcott, E. B.	Mount Pleasant	—	*	*	—	—
Jennison, C. E.	Bowditch	—	—	—	*	*
† Jenkins, A. L.	Mather	—	—	—	*	—
† Jenkins, M. A.	Shurtleff	—	—	*	*	—
† Johnson, M. E.	Everett	—	—	—	*	—
James, A. P.	Brimmer	*	*	*	—	—
Jones, M. C.	Winthrop	*	*	*	—	—
Kelren, I. M.	Norcross	*	*	*	*	*
Knapp, K.	Girls' High	—	—	—	—	*
Knowles, M. A.	Phillips	*	*	—	—	—
Kimball, A. C.	Girls' High	*	*	*	—	—
† Kelley, A. T.	Sherwin	—	*	—	—	—
Lovell, S. E.	Comins	—	—	—	*	*
† Light, M. F.	Winthrop	—	—	—	*	*
† Lothrop, L. I.	Lyman	—	—	—	*	*
† Lothrop, C.	"	*	*	—	*	*
† Loring, S. W.	Winthrop	—	—	—	*	*
† Lancaster, E. M.	Stoughton	—	—	—	*	*
Litchfield, H. E.	Prescott	*	*	*	—	—
Litchfield, S. T.	"	*	*	*	—	—
† Murphy, K. M.	Comins	—	—	—	*	*

Annual Examination. — Continued.

<i>Name.</i>	<i>School.</i>	<i>Freehand.</i>	<i>Model.</i>	<i>Memory.</i>	<i>Geometry.</i>	<i>Perspective.</i>
† Metcalf, R. C.	Adams	—	—	—	*	*
† Meserve, A.	Bigelow	—	—	—	*	*
† Maynard, E. E.	Quincy	—	—	—	*	*
† Mitchell, M.	Dor. Everett	—	—	—	*	*
† Melvin, C. G.	Dearborn	—	—	—	*	*
† Miner, H. B.	Tileston	—	—	—	*	*
McKean, A. L.	Dearborn	—	—	—	—	*
Mulloy, S. E. C.	Ticknor	*	—	*	—	—
† Mitchell, M. A.	Franklin	—	—	*	—	—
Manson, H. L.	Prescott	—	—	*	—	—
Merrill, M. K.	Dor. Everett	—	—	*	—	—
Neal, G. W.	Quincy	—	—	—	*	*
† Nelson, C.	Everett	—	—	—	*	*
Nye, A. M.	Prescott	*	*	*	—	—
† Nickerson, C. K.	Sherwin	—	*	—	—	—
† Page, E. H.	Stoughton	—	—	—	*	*
† Parker, W. S.	Dwight	—	—	—	*	*
Page, I. A.	"	—	—	—	*	*
Pickering, E. A.	Dudley	—	—	—	*	*
Patch, E. O.	Girls' High	*	*	*	*	*
† Perry, S. F.	Bowdoin	—	—	—	*	*
Perry, M. W.	Wells	*	*	*	*	—
Pillsbury, E.	Prescott	*	*	*	*	*
Pratt, C. E.	Stoughton	—	—	—	*	—
Plummer, M. E.	Prescott	*	*	*	—	—
† Putnam, C. D.	Comins	—	*	—	—	—
Prescott, A. D.	Chapman	—	—	*	—	—
† Redding, L. M. A.	Emerson	—	—	—	*	—
Rice, M.	Washington	—	*	—	—	—
† Robie, R. E.	Stoughton	—	*	—	—	—
† Sherburne, M. B.	Harris	—	—	—	*	*
† Synett, S. T.	Chapman	*	—	*	*	*

Annual Examination.—Concluded.

<i>Name.</i>	<i>School.</i>	<i>Freehand.</i>	<i>Model.</i>	<i>Memory.</i>	<i>Geometry.</i>	<i>Perspective.</i>
Shorey, S. A.	Girls' High	—	—	—	*	*
Scates, M. E.	" "	*	*	*	—	—
Sweat, C. E.	Washington	*	—	—	—	—
† Shephard, S. K.	Mather	—	*	—	—	—
Shannon, E. L. P.	Everett	—	—	*	—	—
† Snow, J. D.	Sherwin	—	*	—	—	—
Tower, J. S.	Franklin	—	—	—	*	*
Temple, E. A.	Girls' High	—	—	—	*	*
Tucker, E. I.	Quincy	—	—	—	*	*
Thompson, M. F.	Dor. Everett	*	*	*	—	—
† Torrey, F.	Winthrop	*	—	—	—	—
† Whitman, A. G.	English High	—	—	—	*	*
Wales, E. S.	Atherton	—	—	—	*	*
† Walton, E. B.	Sherwin	—	—	—	*	—
† Welch, O. A.	Eliot	—	—	—	*	*
† Ward, Jr., I. T.	Minot	—	—	—	*	*
Whitman, C. O.	English High	*	*	*	*	—
Waldock, E. M.	Comins	—	—	—	*	*
Wyman, E. L.	Appleton Street	*	*	*	—	—
Wood, L. M.	Dearborn	*	—	—	—	—
Williams, K. D.	Deaf-Mute	*	—	*	—	—
Warner, E. M.	Lincoln	—	*	*	—	—
† Whipple, J. G.	Rice	—	*	—	—	—
† Wallace, K. M.	Eustis Street	—	*	*	—	—
† Welch, C. F.	Winthrop	—	*	—	—	—
Young, E. B.	Brimmer	—	—	—	*	*
Youngman, E. K.	Boylston	*	*	—	—	—
Young, A. M.	Lewis	—	*	—	—	—

WALTER SMITH, *Examiner.*

Freehand Drawing Examination of Second Grade.

FREE EVENING CLASSES—APPLETON STREET, 1873.

NAME.	FREEHAND.		MODEL.	
	<i>Good.</i>	<i>Excellent.</i>	<i>Good.</i>	<i>Excellent.</i>
George B. Seidensticker	—	*	—	—
Henry L. Stevens	—	*	*	—
T. M. Plimpton	—	*	*	—
W. P. Hooper	—	*	*	—
T. E. Rafferty	—	*	—	—
W. Clossom	—	*	—	*
C. F. Bush	—	*	*	—
John D. Lord	—	*	—	*
S. Gallagher	—	*	—	*
Chas. Duncan	—	*	*	—
P. G. Gullbrandson	—	*	—	*
Peter Roos	—	*	—	*
J. A. Beer	—	*	—	*
Chr. Eberhard	—	*	*	—
H. W. Avery	—	*	—	*
M. E. Joslyn	—	*	—	*
H. H. Brickley	—	*	*	—
Jas. Dorsey	—	*	—	*
A. H. Seavers	—	*	*	—
E. Rose	—	*	—	*
A. H. Munsell	—	*	*	—
Thos. Grady	—	*	*	—
Jas. W. Reid	—	*	*	—
L. C. Stoddard	*	—	*	—
Chas. Roah	*	—	—	—
H. J. Jaquith	*	—	—	—
L. H. Galencia	*	—	—	*
W. B. Ellis	*	—	—	—
S. G. Sumner	*	—	*	—
L. F. Smith	*	—	—	—

Freehand Drawing. — Concluded.

NAME.	FREEHAND.		FREEHAND.	
	<i>Good.</i>	<i>Excellent.</i>	<i>Good.</i>	<i>Excellent.</i>
W. Seidensticker	*	—	*	—
Thos. Foster	*	—	*	—
Jas. Mayes	*	—	—	—
F. E. Fillebrown	*	—	—	—
J. A. Hackett	*	—	—	—
G. M. Livermore	*	—	—	—
L. A. Cobbigh	*	—	—	—
Wm. H. Fowles	*	—	—	*
F. Joseph	*	—	—	*
D. Weston	*	—	—	—
J. P. Payson	*	—	—	—
H. M. Chenery	*	—	—	—
C. Schraff	*	—	*	—
E. C. Wedger	*	—	—	—
J. Collins	*	—	*	—
H. A. Chenery	*	—	—	—
J. B. Pearce	*	—	—	—
C. H. Brown	*	—	—	—
F. Getchell	*	—	*	—
L. C. F. Hinz	*	—	*	—
C. J. Wall	—	—	—	—

WALTER SMITH, *Examiner.*

Instrumental Classes.—Examination of Second Grade.—1873.

STARR KING SCHOOL.

	Mechanical.		Architectural.		Geometrical.		Ship Draughting.	
	Excellent.	Good.	Excellent.	Good.	Excellent.	Good.	Excellent.	Good.
W. F. Wright	*	—	*	—	*	—	—	—
C. A. Sampson	—	*	—	—	*	—	—	—
M. B. Prendercast	—	*	—	—	—	*	—	—
G. F. Underwood	—	*	*	—	*	—	—	—
M. F. Munson	—	—	—	*	*	—	—	—
James E. Loobey	—	*	—	—	—	*	—	—
Charles H. McDonald	—	*	—	—	*	—	—	—
W. Adams	—	*	—	—	—	—	—	—
F. Weis	—	*	—	—	—	—	—	—
A. E. Downs	—	*	—	—	—	—	—	—
O. H. Arno	—	—	—	—	—	*	—	—
E. L. Foucar	—	—	—	—	*	—	—	—
H. Johnson	—	—	—	—	*	—	—	—
C. A. Fitzgerald	—	—	—	*	—	—	—	—
C. L. Reed	—	—	—	*	—	—	—	—
James Bulger	—	—	—	*	—	—	—	—
J. Watson	—	—	—	*	—	—	—	—
Geo. W. Rogers	—	—	—	*	—	—	—	—
D. D. Gifford	—	—	*	—	—	—	—	—
A. Gills	—	—	*	—	—	—	—	—
M. Camman	—	—	*	—	—	—	—	—
E. W. Smith	—	—	*	—	—	—	—	—
C. H. Bogan	—	—	—	—	—	—	*	—
James Burke	—	—	—	—	—	—	*	—
Thomas P. Smith	—	—	—	—	—	—	*	—
John P. Kerr	—	—	—	—	—	—	*	—
Ch. Reed	—	—	—	—	—	—	—	*
K. M. Mahony	—	—	—	—	—	—	—	*
John W. Burnham	—	—	—	—	—	—	—	*
Jacob Rood	—	—	—	—	—	—	—	*

WALTER SMITH, *Examiner.*

***Instrumental Classes. Examination of Second
Grade. — 1873.***

EVENING HIGH SCHOOL.

NAME.	ARCHITECTURAL.		GEOMETRICAL.		MECHANICAL.	
	<i>Excellent.</i>	<i>Good.</i>	<i>Excellent.</i>	<i>Good.</i>	<i>Excellent.</i>	<i>Good.</i>
P. E. Lunn	*	—	—	—	—	—
G. W. Mitchell	*	—	—	—	—	—
Charles S. Greeley	*	—	—	—	—	—
James D. Drisco	*	—	—	—	—	—
L. W. Carstein	*	—	*	—	—	—
J. Hayes	*	—	*	—	—	—
W. P. Walsh	*	—	—	—	—	—
Thomas Lynch	*	—	—	*	—	—
M. E. Mitchell	*	—	—	—	—	—
W. M. Ready	*	—	—	—	—	—
M. F. Mulligan	—	—	*	—	*	—
Charles R. Campbell . . .	—	—	*	—	*	—
Charles G. Greeley	—	—	*	—	—	—
John R. Lowell	—	—	*	—	—	—
F. A. Lewis	—	*	*	—	—	—
M. C. Campbell	—	—	*	—	—	—
F. H. Capper	—	*	—	*	—	—
J. F. Kirby	—	—	—	*	—	*
N. N. Hall	—	—	—	*	—	—
P. M. Kinnon	—	*	—	*	—	—

WALTER SMITH, *Examiner.*



REPORT
OF
SCHOOL COMMITTEE
ON
NORMAL SCHOOL.

REPORT.

I.

In pursuance of an order in School Committee, dated May 13, 1873, the Committee on the Normal School respectfully present the following

REPORT.

In the first Annual Report of Nathan Bishop, Esq., the first Superintendent of the Public Schools of Boston (1851), there is a recommendation for the establishment of a Normal School "as a part of the Boston system of public instruction." The following is an extract from this Report:—

"I recommend the establishment of a Normal School, as a part of the Boston system of public instruction. It is due to the inhabitants of this city to establish an institution in which such of their daughters as have completed with distinguished success the course of studies in the Grammar Schools may, if they are desirous of teaching, qualify themselves in the best manner for this important employment. Educated in our schools, they would be familiar with our modes of teaching and management, and would lend a cordial co-operation in carrying into effect all the provisions of the school system. It is believed that the amount of money required for the support of such a school cannot be expended in any other manner which will render so much service to the schools."

[*From City Document No. 32, 1852.*]

ACTION OF THE SCHOOL BOARD.

IN SCHOOL COMMITTEE, January 13, 1852.

Ordered, That so much of the Superintendent's Report as relates to the establishment of a Normal School as a part of our system of Public Instruction be referred to a special Committee of five. Passed, and Messrs. Eaton, Tracy, Simonds, Simpson and Hahn were appointed said committee.

Attest:

EDWARD CAPEN,
Secretary.

Extract from Report of Special Committee on Normal School:—

The Special Committee, to whom, by an order passed January 13th, was referred so much of the Superintendent's Report as relates to the establishment of a City Normal School, have attended to the duty assigned them, and respectfully ask leave to present the following

REPORT.

As to the value and importance of Normal Schools, if rightly and wisely conducted, we suppose there can now be no wide difference of opinion among the intelligent friends of popular education, especially in our own State, where such institutions have been so fairly tested and so eminently successful.

Originally instituted in foreign lands and by despotic governments, Normal Schools have been found, wherever tried, the most efficient instruments for the improvement of educational systems. Their introduction into this State was urged with persevering earnestness by many who were deeply impressed with the conviction that something of the kind was needed to elevate the teachers of our common schools, and so infuse new life and vigor into the schools themselves, of whose inefficiency at that time there was almost universal complaint.

Reasoning from the old and well-founded maxim that, "as is the teacher, so is the school," it was an obvious conclusion that

one means of at last improving the character of the schools, so that they might be brought more into harmony with the wise and beneficent intent of the law, was to elevate the character of the teacher by raising the standard of qualification for his office.

It never was the design, and probably never will be the policy, of the State to maintain schools of this character in sufficient numbers to qualify and furnish teachers for all the schools of the State. But it was confidently believed that, should a full and fair experiment be made under her auspices, and the results answer the expectations of the friends of popular education, the various counties and cities would thereby be induced to found similar schools for their especial benefit, and under their own control.

As no adequate reliance can be placed upon the existing State institutions for affording to any great number of those who belong to the city, and who may desire to prepare themselves for teachers, the best or even reasonable facilities for so doing, there would seem to be no other means so effectual for attaining this end, as the establishment of a school for this direct object, to be under the exclusive management and control of the city.

The pupils would be the daughters of our own citizens, with their homes and their affections here; they would be graduates from our public schools, familiar with their organization and method of instruction; and lastly, and more than all, they would be fitted for the work in which they are to engage, by a long, severe, and specific training.

We wish it to be distinctly understood, that a school, such as we have in view, should be one wholly and exclusively instituted for the single object of preparing teachers for our public schools,—that it should be a *Normal School* and *nothing else*;—that it should be resorted to by those only who may desire to qualify themselves for teaching, and that to all such it should be freely opened, at least, as freely as would be consistent with the end proposed by its establishment.

A Normal School for the city being established, a remedy for an evil of no small moment in the aggregate will be, to a great extent, if not effectually, provided. We allude to the employment of substitutes in place of the regular teachers when necessarily absent from ill health or other temporary causes. When such

vacancies occur, and they are by no means infrequent, they are, we suppose, generally filled by such persons as can be most readily obtained; as, from the emergency of the case, not much opportunity can be had for making a very careful selection; and thus, for a longer or shorter time, a whole class may be under the direction of one who has never taught before, and has perhaps no intention of ever doing so again, and consequently has given no thought to the subject. If, on her return, the teacher should find her class, under such circumstances, in as good condition as when she left, it would be all that could be expected, if not an occasion for congratulation. Now, for all such emergencies, substitutes might be obtained from the upper class of the Normal pupils to the mutual advantage of themselves and the schools. They would enter upon such a trial of their strength with alacrity and interest. Inexperienced in one sense they might be, but not wholly unprepared; for how best to prepare themselves for this very work would have been for months the engrossing subject of their thoughts and study.

In conclusion, your Committee, fully satisfied of the practical utility of Normal Schools in general, are also firmly persuaded that in no other way can the educational interests of the city be more promoted, than by the establishment of an institution for the special preparation of the large number of teachers constantly required for the public service. And this conviction has been strengthened by every view of the subject they have been able to take.

Your Committee, therefore, fully concurring in the suggestions of the Superintendent, which led to the adoption of the order which they have had under consideration, and actuated solely by an earnest desire to promote the cause of popular education in our city, unanimously recommend the adoption of the accompanying order.

GEORGE EATON,
FREDERIC U. TRACY,
ALVAN SIMONDS,
DANIEL P. SIMPSON,
SILAS B. HAHN,

Committee.

Ordered, That the foregoing report be accepted, and that the Chairman be requested to transmit the same to the City Council, with the request that the necessary votes may be passed to establish the proposed school.

[*Appendix to City Document No. 32, 1852.*]

CITY NORMAL SCHOOL.

IN COMMON COUNCIL, July 8, 1852.

Read, laid on the table, and ordered to be printed with City Document No. 32, 1852.

Attest:

W. P. GREGG,
Clerk C. C.

The Committee on Public Instruction, to whom was referred the Report of the School Committee, asking that the necessary votes may be passed to establish a City Normal School, have considered the subject, and respectfully submit the following

REPORT.

Your Committee are unanimous in the opinion that a well-conducted Normal School would very soon furnish a class of teachers for our Public Schools much superior to the average of those who can now be obtained for the present salaries.

A Normal School, forming a part of our system of Public Instruction, would enable the active and energetic young women of Boston to qualify themselves to compete successfully for the places of teachers in our schools, and would thus secure the annual distribution of from \$60,000 to \$70,000 among the daughters of our own citizens. The proposed Normal School will prepare from eighty to one hundred graduates every year, and from sixty to seventy-five of this number will be wanted in our schools annually to fill the vacancies that are from time to time occurring.

Your Committee do not deem it necessary to add to the considerations already presented to the Council in favor of granting the request of the School Committee, and they unanimously recommend the passage of the following order, viz.:—

Ordered, That a Normal School be established in the Adams School House [Mason street] as a part of the system of Public Schools, for the purposes set forth in the Report of the School Committee, being City Document No. 32 for the present year.

BENJAMIN SEAVER,
SAMPSON REED,
JACOB SLEEPER,
HENRY J. GARDNER,
DANIEL N. HASKELL,
HARVEY JEWELL,
PETER C. JONES,
EDWARD A. VOSE.

July 19, 1852.

In Common Council: Read, accepted, and the order passed.
Yeas, 29; Nays, 8.

Came up for concurrence. Read and concurred.

Yeas: The Mayor, Alderman Ober, James, Reed, Sleeper, Perry, Cary and Rich, 8. — Nays, none.

BENJ. SEAVER,
Mayor.

ORGANIZATION OF NORMAL SCHOOL.

IN SCHOOL COMMITTEE, Aug. 3, 1852.

Ordered, That the Sub-Committee on the Normal School be directed to draw up the plan of organization of said school, with the necessary rules to carry out the plan, and report to this Board as early as practicable.

Attest:

EDWARD CAPEN,
Secretary.

[Extracts from Report.]

In pursuance of an order in School Committee, dated August 3, 1852, the Sub-Committee on the Normal School respectfully present the following

REPORT.

The order of the City Government establishing the Normal School was passed in accordance with the recommendation of the report of a Special Committee of this Board.

The utility and importance of special schools for the preparation of teachers are now fully demonstrated by the experience of other cities, and by the successful results of those already in operation in our own State. The want of such an institution has long been felt in this city, where a very large number of female teachers is constantly required for our public schools. Without intending any reflection upon the ability and skill of our assistant teachers, many of whom are acknowledged to be highly qualified for the pursuit in which they are engaged, the Committee believe that deficiencies still exist in many of our schools, which only an institution of this kind can fully supply. It is of much consequence that the teachers in our common schools should be themselves thoroughly and judiciously taught. The interests committed to their charge are of the gravest character, and their influence, beginning at an age when the mind of the pupil is most easily moulded and trained, must have an important bearing on the future welfare of the community. No wiser course, as it appears to your Committee, could have been adopted for the improvement of our schools, than to make provision for the careful and systematic instruction of those who are to be employed in them. We believe that the ultimate effect of these measures will be to raise the standard of the qualifications of our teachers to a higher point than it has ever before attained, and thus to elevate the tone of education in our city.

It is expected that all who apply for admission to this school should do so with the intention of becoming teachers. The plan of study and instruction is arranged expressly with that view. No promise or engagement will, however, be required, the intention or

desire to teach being considered as implied in the application for admission.

The school, however, it should be understood, is not designed to take the place of a High School for girls, but to prepare teachers thoroughly and systematically for the efficient discharge of those duties which they will be daily called upon to perform.

Candidates for admission must be over sixteen, and not more than nineteen years of age.

An application for admission shall be considered as a sufficient declaration, on the part of a candidate, of an intention to engage in the pursuit of teaching after leaving the school.

The course of instruction shall combine a thorough review of all the studies taught in the Grammar Schools, with the addition of such collateral branches as are important for the explanation and illustration of those studies. Such of the more useful and higher studies as it may be found expedient to add to the course may be from time to time introduced at the discretion of the Sub-Committee. The design is to give the pupil an accurate acquaintance with the details of the various branches, and at the same time an enlarged and comprehensive view of the principles involved in each, and its relation to other departments of knowledge.

The instructors of this school shall be a master, a principal assistant, and as many additional assistants as may be found expedient.

To carry into effect the provisions of the plan of organization herein proposed, your Committee unanimously recommend the adoption of the accompanying order.

LE BARON RUSSELL,
E. HASKET DERBY,
DANIEL P. SIMPSON,

Committee.

Ordered, That the Sub-Committee of the Normal School be rector to proceed to the organization of the school, in accordance with the recommendations of the foregoing report.

IN SCHOOL COMMITTEE, Sept. 14, 1852.

The foregoing report was accepted, and the order passed.

Attest:

EDWARD ÇAPEN,
Secretary.

[*Extract from Report of School Committee for 1852.*]

This order passed both branches of the City Government almost without opposition, and thus an institution was established, which, in our opinion, promises to do more for the improvement of our schools, than any one measure which has been adopted within the last twenty years.

REMARKS. — It appears from the foregoing portion of the report, that the Normal School was *established* in 1852 by the *City Council*, on the recommendation of the School Board, and that it was subsequently properly and legally organized by the School Board, — in which, according to the statutes, its management and control must reside; and which body alone has authority to prescribe its course of study and to appoint its teachers and fix their salaries.

His Honor the Mayor of the city was Chairman of the Committee on Public Instruction, which *unanimously* recommended the establishment of the school, and associated with him were men of high legal and business talents.

A careful reading of the Records of the City Council shows that from its establishment, in 1852, to the present time, 1873, a period of *twenty-one years*, no action has been taken by the City Council in any way invalidating or changing its foundation.

II.

GIRLS' HIGH SCHOOL, AND GIRLS' HIGH
AND NORMAL SCHOOL.

A few extracts from the records of the School Board, and of the City Council will show the origin of the Girls' High School, and its relation to the Normal School.

[*From City Document No. 89, 1853.*]

REPORT ON HIGH SCHOOL FOR GIRLS.

IN SCHOOL COMMITTEE, May 17, 1853.

The petition of Walter Channing, Charles A. Wells, Edwin C. Bailey, and three thousand others, praying for the establishment of a High School for girls, was read and referred to a Sub-Committee consisting of Messrs. Stevenson, Dexter, Bates, Skinner and Hazleton, to consider and report.

Attest:

BARNARD CAPEN,
Secretary.

IN SCHOOL COMMITTEE, Dec. 29, 1853.

The Committee to whom was referred a petition asking for the establishment of a High School for girls, having considered the same,

REPORT.

That the largeness of the number of the petitioners is a gratifying evidence of the interest felt by the citizens of Boston in the cause of female education.

The subject is not free of embarrassment. The experiment has been tried, failed, and was abandoned. A High School for girls was established in 1826; and it was discontinued in 1828, for reasons which would now operate with increased force.

The necessary effect of the establishment of schools of a higher order would be to reduce the standard of education in the existing

ones, and, by withdrawing from them the most forward of the pupils, to impair their usefulness to those who should remain in them. The influence of classes of pupils in the later stages of an education materially affects the character of the whole school. The younger are benefited by their presence. The loss of that influence in our Grammar Schools would be deprecated. Take the highest class and the most cultivated pupils out of a school, and you will have removed one of the most efficient incentives to industry and perseverance from those who compose the younger classes.

Entertaining the views which are stated in this report your Committee cannot recommend the establishment of separate High Schools for girls; and believing that it is a fit subject for further inquiry, whether more provision than is now accorded ought not to be made for the education of girls in the existing schools, they ask that the petition with which they have been charged may be referred to the next School Committee.

For the Committee,

J. THOMAS STEVENSON,
Chairman.

[*From City Document No. 43, 1854.*]

IN JOINT STANDING COMMITTEE ON PUBLIC INSTRUCTION,
February 16, 1854.

Voted, That the Mayor and the President of the Common Council, and Messrs. Hinds, Brainard and Dunham be a Sub-Committee to investigate the matter of establishing a course of instruction for girls, to be denominated a High School.

CYRUS GOULD, *Secretary*,
For Committee on Public Instruction.

IN SUB-COMMITTEE.

Messrs. Hinds and Rice were appointed to report upon the expediency of establishing a single and Central High School, and Messrs. Dunham and Brainard were appointed to report upon the expediency of establishing a course of High School Instruction in four localities, namely, one at East Boston, one at South Boston, one at the South end, and one at the West end of the city proper.

IN JOINT STANDING COMMITTEE ON PUBLIC INSTRUCTION,
April 18, 1854.

The report was accepted, and ordered to be transmitted to the City Council.

J. V. C. SMITH,

Mayor.

JOSIAH DUNHAM, JR.,

GEO. F. WILLIAMS,

Aldermen.

ALEX. H. RICE.

President C. C.

CALVIN P. HINDS,

E. H. BRAINARD,

Members C. C.

The Sub-Committee of the Joint Standing Committee on Public Instruction, to whom was referred so much of the Mayor's address as relates to the establishment of a High School for girls, have given the subject such consideration as their time would allow, and beg leave to submit the following

REPORT.

It appears from the statistics given in the very able report of the School Committee for 1853, that there are the following public schools in the City of Boston, viz.: The Latin School, the English High School, the Normal School, the Grammar Schools and the Primary Schools.

The Normal School, exclusively for girls, has an average attendance of about one hundred and seventy-five pupils, and is designed to educate girls, who have graduated at the Grammar Schools, *for assistant teachers in those schools.*

The City Council, on the 10th of October, 1825, appropriated the sum of \$2,000, for the purpose of establishing a High School for females, and at a meeting of the School Committee, January 13th, 1826, it was voted, that the school instituted for the instruction of the female children of the city in the higher departments of literature and science should be called the High School for girls.

This was the school referred to by Mr. Stevenson in his report of 1853, in School Committee, which he says "was established in 1826, and discontinued, in 1828, for reasons which would now operate with increased force."

Your Committee therefore beg to direct attention to these reasons assigned for the discontinuance of that school, in order to ascertain, whether or not they would now operate with increased force against the establishment at the present time of a High School for girls.

In the year 1826, during the existence of the High School for girls, the City of Boston appropriated, for all its annual educational purposes, between fifty and sixty thousand dollars; and apart from the demand which would necessarily be made for additional appropriation for the maintenance and support of said school, the only reasons which your Committee have been able to find, as tending to militate in the least degree against the further continuance of said school, and the only one ever relied upon by its opponents, are suggested in a letter addressed to the teachers of the Grammar Schools, by the Honorable Josiah Quincy, then Mayor of Boston, and Ex-Officio Chairman of the School Committee, which letter was as follows:—

MAYOR'S OFFICE, Oct. 16, 1826.

GENTLEMEN:—

Suggestions having been made, that the effect of the High School for girls has been disadvantageous upon the character and prospects of the other schools of the metropolis,—

1. By diminishing the zeal of the generality of the other females in these schools.

2. By taking away from them their most exemplary scholars.

3. By disqualifying the masters from a gradual introduction into those schools of the monitorial system, by thus removing from them the class of females best qualified to become monitors.

4. By reducing the other schools from the highest to secondary grade, by early depriving them of those scholars in whom they have the greatest pride, and who are of the highest promise.

I am directed by the School Committee to inquire, whether, as far as your experience extends, there is any foundation for these suggestions; and if not, then whether any and what effect has

been produced by the establishment of the High School for girls, on the character and prospects of your schools.

No further appropriation was ever made, and the High School for girls ceased to exist, for reasons, which Mr. Stevenson says, in his report before alluded to, would now operate with increased force.

The only *real* obstacle in the way of a High School for girls, at the time of its first establishment, was, as has been before observed, the same as at the present time, — the *expense*.

If the effect of establishing a High School for girls would, for the reasons assigned, be so disastrous to the Grammar Schools, why, it would seem just to inquire, does not the same reasoning apply to the Grammar Schools, in their effect upon the Primary Schools?

Believing, then, as do your Committee, that the prosperity of Boston is owing, in a large degree, to the past and present liberality of her citizens in the cause of education, they confidently trust that the recommendations in the above report may be adopted, and that the present system of Public Instruction in this city may be rendered symmetrical and complete in all its proportions by the establishment of a High School for girls.

Your Committee, therefore, recommend the passage of the appended resolve.

For the Committee,

CALVIN P. HINDS,

Chairman.

Resolved, That the foregoing report be submitted to the City Council, with the recommendation that the whole subject be referred to the School Committee for further consideration.

Passed by Common Council, May 25, 1854.

The foregoing is from the report of *one* of the two Sub-Committees appointed by the Joint Standing Committee on Public Instruction, Feb. 16, 1854.

The report of the other Sub-Committee (City Document No. 44, 1854) is signed by Alderman Josiah

Dunham, Jr., as chairman, and concludes with the following resolves: —

Resolved, That, in the opinion of the City Council, it is expedient that four High Schools for girls should be established in the City of Boston.

Resolved, That whenever the School Committee shall establish four High Schools for girls, it will be the duty of the City Council to provide suitable and proper accommodations for them, at the northern and southern sections of the city, and at South Boston and East Boston, in conformity with the plan submitted in the foregoing report.

These two reports came before the Board of Aldermen. The following, from the Records of the City Clerk, shows the action of the City Council: —

EXTRACT FROM RECORDS OF BOARD OF ALDERMEN,
MAY 29, 1854.

The Common Council having amended the resolves which this Board attached to the Report of the Committee on Public Instruction, which recommends the establishment of four High Schools for girls, by striking out all after the word “*That*,” and inserting as follows: —

“The foregoing report be transmitted to the School Committee as an expression of the opinion of the City Council of Boston in favor of the establishment of a system of High School Instruction for girls within said city.”

Came up for concurrence.

Read and concurred.

[From City Document No. 80, 1854.]

REPORT ON A HIGH SCHOOL FOR GIRLS.

IN SCHOOL COMMITTEE, November 14, 1854.

The Special Committee to whom was referred the resolves sent to this Board by the City Council, advising the establishment of a High School for girls, respectfully

REPORT.

Your Committee have given the subject referred to them the careful consideration which its importance and the strong recommendation of both branches of the City Council demanded.

We think that a favorable opportunity is offered to try the experiment of this school, at a small expense. On consultation with the Sub-Committee of the Normal School, we are informed that if the Model School be removed from the building in Mason street, there would be seats, in the rooms thus vacated, for at least one hundred and twenty pupils. We suppose, too, that the City Library will, probably, be accommodated elsewhere before long, and in that event there would be room for double the above-named number of pupils, or even more.

We advise, therefore, that the High School for girls should be placed in that building, and under the charge of the Sub-Committee of the Normal School, which could be enlarged, if deemed expedient, by the addition of two or more members.

We would also recommend that the admission to the school, if established, should be under similar regulations to those now in force at the Normal School, and that an examination should be had in the studies required to be taught in the Grammar Schools.

We, therefore, respectfully submit the accompanying orders.

For the Committee,

JOHN LOWELL,

Chairman.

Ordered, That it is expedient to organize a High School for girls in compliance with the foregoing recommendations.

Ordered, That a Committee be appointed, consisting of the Normal School Committee and four others, to organize a High School for girls, substantially in accordance with the foregoing

report; and to submit their plan, for approval, to this Board, and at an early meeting of the Board.

The foregoing orders were adopted, and to the Normal School Committee, consisting of Messrs. Russell, Thorndike and Norcross, Messrs. Lowell, Parks, Randall and Skinner were added.

Attest:

BARNARD CAPEN,
Secretary.

Nov. 14, 1854.

FINAL COMMUNICATION OF SCHOOL BOARD TO CITY COUNCIL, IN REGARD TO A HIGH SCHOOL FOR GIRLS.

The foregoing report, dated Nov. 14, 1854, was followed by another, Nov. 28, from a Special Committee of the School Board, appointed to report a plan for the organization of a High School for girls, as follows:—

Ordered, That the foregoing report be accepted, and that the plan therein recommended be adopted as the organization of the High School for girls, when established.

Ordered, That the Chairman be requested to transmit to the City Council the foregoing reports, with the request that they pass the necessary votes to carry the same into effect.

Read, accepted, and the orders passed.

Attest:

BARNARD CAPEN,
Secretary.

Nov. 28, 1854.

These orders were referred by the City Council to the Committee on Public Instruction. They do not appear to have been reported upon by that Committee, and consequently were never acted upon by the City Council.

From that date to the present, no communication seems to have been sent to the City Council by the School Committee, on the subject of a High School for girls.

[*From City Document No. 67, 1855.*]

SCHOOL COMMITTEE'S REPORT ON THE SUBJECT OF
HIGH SCHOOL INSTRUCTION FOR GIRLS, 1855.

IN BOARD OF ALDERMEN, June 25, 1855.

Resolved, That, in the opinion of the City Council, it is expedient that ample provision should be made for giving an extensive and thorough course of High School instruction to all girls in the different sections of the city, who are qualified to enter upon the study of the higher branches of education.

Resolved, That the School Committee be desired to consider the expediency of establishing High School classes in the different sections of the city.

Ordered, That a copy of the above be sent to the School Committee.

Passed : sent down for concurrence.

WILLIAM WASHBURN,
Chairman.

IN COMMON COUNCIL, June 28, 1855.

Concurred :

JOSEPH STORY,
President.

June 29, 1855.

Approved :

J. V. C. SMITH,
Mayor.

A true copy, Attest :

SAM'L F. McCLEARY,
City Clerk.

[*Extracts from Report.*]

The Special Committee to whom was referred a resolve of the City Council in relation to the expediency of making provision for giving a course of High School instruction to girls; and desiring the School Committee to consider the expediency of estab-

lishing High School classes in the different sections of the city, respectfully

REPORT :

That, after a careful consideration of the subject, they find no reason to recommend any further action than the Board has already taken in reference to a High School for girls, or to High School classes.

The experiment of establishing a large High School for girls, which had been made some years before, had proved unsuccessful, owing to various causes which it is not necessary at this time to recapitulate. It seemed, however, to the Board that the time had now arrived when a new effort should be made in this direction. With this view the Normal School was established. Its immediate object was to educate teachers for the Primary and Grammar Schools of the city; but as it at the same time adopted a more extended course of study, and afforded a higher kind of instruction than has been attainable at the Grammar Schools, it in some degree supplied the place of a High School for girls.

All that was necessary to constitute it a High School, in fact, was the introduction of a few additional branches of study, and a slight alteration in the arrangement of the course.

These changes were made by the Board of last year. The school is now called the Girls' High and Normal School.

Your Committee, therefore, believe that no further action by the Board is necessary at the present time, on the subject of High School instruction for girls.

For the Committee,

LE BARON RUSSELL,

Chairman.

December, 1855.

This report was not sent to the City Council.

REMARKS. — From the second part of the foregoing report it appears that in the long and able discussions respecting a Girls' High School, nothing was said which showed any want of confidence in

the Normal School, or any desire to discontinue the same.

And the two courses were finally united by the School Board.

It does not appear that the City Council (excepting the school established in 1826 and continued two years) has ever established a Girls' High School. If all the orders which were sent by the Council to the School Board, during a series of years, respecting the establishment of such schools, were adopted, then the city must have a great number of such High Schools for girls. But the facts are as follows:—

The School Committee having arranged a course of combined High School and Normal study, and prepared the requisite regulations for the school, sent the following order to the City Council:—

“November 28, 1854.

“*Ordered*, That the chairman be requested to transmit to the City Council the foregoing reports, with the request that they pass the necessary votes to carry the same into effect.”

The City Council took no action upon this order; but subsequently, June 29, 1855, sent the following to the School Board:—

“*Resolved*, That the School Committee be desired to consider the expediency of establishing High School classes in the different sections of the city.”

The School Committee decide [see Report of Le Baron Russell, Chairman, on a previous page of this report], that, having introduced High School studies into the Normal School, there was no occasion for any further action.

Here the matter has rested until the present time. Boston has no Girls' High School established according to the statutes and laws of the Commonwealth. In *fact*, we have such a school, fully organized, and both an honor and a blessing to the city.

So far as the Records show, the term "High and Normal School" seems to have come into use by common consent, and not by any enactment.

III.

SEPARATION OF THE GIRLS' HIGH AND NORMAL SCHOOL INTO TWO SCHOOLS, THE GIRLS' HIGH SCHOOL AND THE NORMAL SCHOOL.

For many years it had been evident that the Normal element in the school had become wholly secondary, and that additional means must be taken to secure a sufficient number of properly qualified teachers to fill the vacancies constantly occurring in our schools, and this from no fault of the teachers or members of the Board in charge of the school. It was inevitable in the very nature of the case. The course of instruction and the plan of work are such in a Normal School that it cannot be most successful in connection with regular High-School work.

In 1870, a division of the school was recommended, and the restoration of the Normal School to its original standing, as a school for preparing teachers for the Boston Public Schools.

[*Extracts from Report of Sub-Committee.*]

IN SCHOOL COMMITTEE, April 11, 1871.

The Committee on the Girls' High and Normal School have given careful consideration to the subject of establishing a

separate Normal School, which was referred to them in January, 1870, by this Board.

This school was established in 1852, as a Normal School. Its design was to educate young ladies to become teachers. The course of study was large and liberal, embracing the branches usually taught in High Schools; and with this thorough mental culture was joined such special instruction as every teacher requires to fit her for her work, accompanied by practice in a model school. This is not a High School to which a Training Department has been added, but a Normal School, admitting pupils who do not propose to teach, and who desire to avail themselves of the opportunity of obtaining a good education. But the High School has gradually gained an ascendancy over the Normal element until the actual preparation for the work of teaching has come to be restricted to the Training Department; and that branch, since it has been under the same roof with the rest of the school, has almost lost its independent, distinctive and professional character.

In order to secure to our city a strictly Normal School, it appears to your Committee that one of two courses must be adopted. We may restore this school to its original condition, or we may separate the Normal from the High School.

If the first plan be adopted, experience teaches us that the Normal element will gradually be absorbed and cease to exist.

Your Committee, accordingly, recommend, in place of the Training Department, the establishment of a Girls' Normal School for the City of Boston, to be distinct from the Girls' High School, and under a separate head, and that both schools be under the supervision of the same committee.

They also recommend that graduates of the High School for girls, having completed the three years' course, and others who by examination are found to have received an education equivalent to that given in our High School, be admitted as pupils in the Normal School; that the course of study occupy one year, and that diplomas of graduation be given to those who, at the end of the year, are found qualified to become teachers.

Respectfully submitted, for the Committee,

HENRY BURROUGHS,

Chairman.

IN SCHOOL COMMITTEE,
BOSTON, March 12, 1872.

1. *Ordered*, That the Committee on the subject of a distinct Normal School be and hereby are authorized to report to this Board a plan for the organization of a Normal School in the City of Boston, which school shall be established and go into operation at the beginning of the next school year.

On the 14th of May, 1872, the same Committee submitted a plan for a "distinct Normal School," which was unanimously adopted by the School Committee. It is provided, among other things, that "the school shall be known as the Boston Normal School, and its purpose shall be to furnish an opportunity for such young women as wish to become teachers, a course of distinct professional study."

On the 11th of June, 1872, the rules and regulations were amended by striking from the organization and management of the Girls' High and Normal School all that pertained in any way to the Normal department.

At an adjourned meeting of the School Committee, July 2, 1872, Mr. Larkin Dunton was appointed Head Master of the Normal School.

IN SCHOOL COMMITTEE, Sept. 10, 1872.

Upon motion of Mr. Merrill, of Ward 11 :—

Ordered, That the City Council be requested to provide some suitable building in which to locate the Normal School established by vote of this Board.

ACTION OF CITY COUNCIL.

Ordered, That the Committee on Public Buildings be authorized to provide suitable accommodations for the Normal School, recently established by the School Committee, in the Girls' High and Normal School building on Newton street; the expense to be charged to the appropriation for School-houses, Public Buildings.

IN BOARD OF ALDERMEN, Sept. 23, 1872.

Read twice and passed : sent down for concurrence.

S. LITTLE,
Chairman.

IN COMMON COUNCIL, Sept. 26, 1872.

Concurred.

M. F. DICKINSON, JR.,
President.

Approved, Sept. 27, 1872.

WM. GASTON,
Mayor.

IN SCHOOL COMMITTEE, Feb. 11, 1873.

Ordered, That the Normal School be transferred from the building of the Girls' High School to rooms in the Appleton-street Primary School building.

Referred to the Committees on the Normal School, the Rice School District, and Drawing, to report at the next meeting of the Board.

IN SCHOOL COMMITTEE, March 11, 1873.

Ordered, That the Normal School be transferred from the building of the Girls' High School, to the two unoccupied rooms in the Appleton-street Primary School building, Rice District, with the joint occupancy of the hall in such way as shall not interfere with the use of the same by the classes in drawing; the permission not to prevent the occupancy of the entire building by the Primary School, whenever the number of pupils in the district shall require it.

Ordered, That the City Council be requested to furnish the rooms for the use of the Normal School.

Both of the orders were referred to the City Council.

IV.

MESSAGE OF MAYOR PIERCE.

The following City Document (No. 65, 1873), although it has not been transmitted to the School Committee, and that Board are not supposed to have knowledge of its issue, has come into the hands of the Chairman of the Committee charged with the preparation of this Report, and as it contains suggestions respecting the Normal School, it is printed in this connection.

City Document. — No. 65.

CITY OF BOSTON.



MAYOR'S MESSAGE

RETURNING WITHOUT HIS APPROVAL THE ORDER TO PROVIDE ACCOMMODATIONS IN THE

APPLETON STREET SCHOOL-HOUSE

FOR THE

NORMAL SCHOOL ESTABLISHED BY THE SCHOOL COMMITTEE.

IN COMMON COUNCIL, May 1, 1873.

Laid on the table, and ordered to be printed.

Attest:

W. P. GREGG,
Clerk of the Common Council.

CITY OF BOSTON.

IN SCHOOL COMMITTEE, March 11, 1873.

Ordered, That the City Council be requested to furnish the rooms for the use of the Normal School.

Attest:

BARNARD CAPEN,
Secretary.

IN COMMON COUNCIL, March 13, 1873.

Referred to the Committee on Public Instruction.

Sent up for concurrence.

E. O. SHEPARD,
President.

IN BOARD OF ALDERMEN, March 17, 1873.

Concurred.

L. R. CUTTER,
Chairman.

IN COMMON COUNCIL, March 27, 1873.

The Committee on Public Instruction, to whom was referred the request of the School Committee that the City Council would furnish the unoccupied rooms in the Primary School-house on Appleton street for the use of the Normal School, having considered the subject, would respectfully recommend the passage of the accompanying order.

For the Committee,

THOMAS GAFFIELD,
Chairman.

Ordered, That the Committee on Public Buildings be authorized to furnish the unoccupied rooms in the Primary School-house on Appleton street, for the use of the Normal School; the expense to be charged to the appropriation for School-houses, Public Buildings.

IN COMMON COUNCIL, April 4, 1873.

Passed.

Sent up for concurrence.

E. O. SHEPARD,
President.

IN BOARD OF ALDERMEN, April 7, 1873.

Concurred.

L. R. CUTTER,
Chairman.

IN BOARD OF ALDERMEN, April 14, 1873.

The foregoing vote was reconsidered, and the subject assigned to Monday next.

IN BOARD OF ALDERMEN, April 21, 1873.

The foregoing order was again read and passed in concurrence.

L. R. CUTTER,
Chairman.

EXECUTIVE DEPARTMENT, CITY HALL,
BOSTON, May 1, 1873.

To the Honorable the Common Council of the City of Boston:—

GENTLEMEN, — I return herewith to the branch of the City Council in which it originated, an order to provide accommodation in the Primary school-house on Appleton street for the Normal School (*a.*), recently established by the School Committee, and I beg leave to state briefly the reasons which have compelled me to withhold my approval.

(*b.*) Previous to 1857 it was not legal for any city or town in this Commonwealth to establish public schools for the education of children over fifteen years of age. In that year an act was passed (since incorporated into the General Statutes, Sec. 7, Chap. 38), authorizing the establishment and support of such schools. Although the School Committee have the superintendence of these schools, when established, and are authorized to determine what branches of learning may be taught therein, the City Councils of cities, and the inhabitants of towns acting in town meeting, alone have authority to establish the schools, and “may determine the term or terms of time in each year and the hours of day or evening during which said schools shall be kept, and appropriate such sums of money as may be necessary for the support thereof.”

The fact that a Normal School, as it was termed, was in existence, as a part of our school system, before the year 1857, does not alter the legal aspect of the case. It is sufficient (*c.*) that the City Council, after the authority was granted, established a “Girls’ High and Normal School,” at which a course of instruction was adopted, not only to qualify the graduates to become teachers, if they chose to adopt that profession, but to give all the pupils, whether they desired to be teachers or not, a complete and thorough education. This school, having outgrown the contracted quarters

where it was first located, was established by the City Council in 1871 in a building specially erected for the purpose on Newton street, at an expense of \$310,715.

In 1870 the School Committee recommended a division of the schools, and the establishment of a "distinct Normal School," devoted exclusively to the education of teachers; and on the 8th of January, 1872, a committee of seven was appointed by the School Committee to report upon a plan for a "distinct Normal School." On the 12th of March, 1872, that committee submitted the following orders, which were adopted:—

First: "That the committee on the subject of a distinct Normal School be and hereby are authorized to report to this Board a plan for the organization of a Normal School in the City of Boston, which school shall be established and go into operation at the beginning of the next school year."

Second: "That the same committee be authorized to secure for the accommodation of said Normal School the rooms now unoccupied in the Appleton-street School-house."

On the 14th of May the same committee submitted a plan for a "distinct Normal School," which was adopted by the School Committee. It is provided, among other things, that "the school shall be known as the Boston Normal School, and its purpose shall be to furnish an opportunity for such young women as wish to become teachers, to receive a course of distinct professional study.

"The teachers shall be a head-master and such assistants as may be found necessary.

(cc.) "Candidates for admission must *signify in writing their intention to teach.*

"A diploma from either of the High Schools shall be considered evidence of qualification for admission."

On the 11th of June, 1872, the rules and regulations were amended by striking from the organization and management of the Girls' High and Normal School all that pertained in any way to the Normal department. The training schools which had been located in this building were discontinued, and the pupils distributed into other schools.

It will be observed, from this hasty review, that the new school is expressly stated to be a *distinct Normal school*. (d.) It is a school above and beyond the High Schools already authorized

by the City Council, and it appears in the Manual, published for 1873, as a distinct and independent organization.

It is questionable whether such a school as this can be established at all at the public expense, and it is clear that it cannot be established without the previous consent of the City Council. *That consent has not been given.* (e.) If it be said that the school originally established by the City Council was denominated a Normal School, with aims and purposes similar to those possessed by the new organization, the legal objection to the action of the School Committee still remains, as that body has not the authority to establish *another* such school.

These are the objections which have made it my duty to return the order to your honorable body for further consideration; but I cannot forbear calling your attention to the expense involved in carrying out the policy inaugurated by the School Committee. (f.) It appears, from the last semi-annual report of the Superintendent of Schools, that the average number of pupils connected with the new Normal School is fifty-three, and the average daily attendance forty-eight. (g.) The head-master of the school receives a salary of \$4,000 per annum, and the four assistants receive \$4,500, making the salaries of the teachers to these forty-eight pupils, \$8,500 per annum. (h.) The building erected on Newton street was extended to accommodate 1,200 pupils. The High School for girls contained in March last 632 pupils. The new Normal School is accommodated at the present time in one room of the building; so that, making allowance for the accommodation required for the botanical and other departments, there remain several rooms unoccupied by any teachers or scholars.

If it is necessary to introduce primary classes for the practice of the Normal pupils, there are, I believe, suitable facilities for so doing. The estimated expense of providing separate accommodations for the new school is \$2,000, but it is evident that the portion of the Primary-School building which it is proposed to occupy at this time will be needed in a very short time for its legitimate purposes, and the government will then be called upon to provide a new building for the Normal School.

I submit herewith the opinion of the City Solicitor upon the legal aspect of the case.

HENRY L. PIERCE, *Mayor.*

CITY SOLICITOR'S OFFICE, 2 PEMBERTON SQUARE,
BOSTON, April 28, 1873.

SIR:—To the question you proposed to me in regard to the legality of the action of the School Committee in establishing a Normal School, I reply that I find no authority for the establishment or maintenance of such a school by them. The committee can expend the moneys raised for the support of schools only for the support of schools of the descriptions which the Statutes of the Commonwealth require or authorize to be maintained; and Normal Schools are not of that number.

I am, with great respect,
Your obedient servant,

J. P. HEALY.

HON. HENRY L. PIERCE, Mayor, etc.

REMARKS ON THE MAYOR'S MESSAGE.

(a.) This school was recently organized as a *separate school*, but not *recently established*. It was established in 1852.

(b.) Previous to 1857, as since, it was legal for cities and town to establish public schools for the education of children of *all ages*, from five to *twenty-one*. In 1857 it was enacted (for purposes of evening schools), that, in certain cases, children *under* fifteen years of age might be *excluded*.

(c.) The City Records do not show that the *City Council* has ever established a Girls' High and Normal School, or any High School for girls, except in 1826, which was disbanded in *two years*. The only school for girls, beyond the Grammar School, established since that date by the City Council, is the Normal School, established in 1852, for the preparation of teachers for the public schools of Boston.

(cc.) This requirement does not affect the legal basis of the school; it was not in the original organization, and may be changed, at any time, by the School Board.

(d.) This statement covers the whole case. The School Committee, in 1870, did recommend "*a division of the school.*" Having allowed the Normal School, established by the City Council in 1852, and a High-School course to come together, and to be called the "Girls' High and Normal School," the same Board took measures for their separation. The union was allowed by the School Committee, and their separation was effected by the same Board.

(e.) It is evident from the whole tenor of the Message of His Honor the Mayor, and the opinion of the City Solicitor, that both have regarded the Normal School as having been established in 1872, — one year ago, — and by the School Board; whereas the fact is, that it was established *twenty-one years ago*, and by the City Council, on the recommendation of the School Board.

(f.) The number of pupils belonging to the school at the time the Message was written, was *sixty-five*. Whole number of pupils, *seventy*.

(g.) The amount of salary paid to all the teachers of the school for the entire year, closing August 31, 1873, is \$7,700; and this amount is larger than it would have been, but for the fact that all the teachers of the Girls' High and Normal School were re-elected; all those of the Training School, or Normal Department, being assigned to the Normal School. If the salary (\$700) of one teacher, whose services have been

wholly devoted to various Primary Schools in the city, were subtracted, the total salary would be but \$7,000.

(h.) The new building, exclusive of the basement and room for drawing, has seats for *eight hundred and eighty pupils*. All these rooms have been occupied during the entire year. The desire, however, for a transfer of the Normal School to other quarters did not arise from want of room in the Newton-street building, nor from any want of harmony between the two schools. The relations of the head-masters and of all the teachers could not have been pleasanter. The reason for desiring a location in connection with a Primary or Grammar School will appear from the following extract from the recent Quarterly Report on the Normal School, submitted June 8th:—

[*Extract from Report.*]

It was hoped that before this time accommodations would be provided for the school, in connection with some fully organized Primary or Grammar School, in order that the pupils might have an opportunity to witness, systematically, the best methods of instruction and discipline, the assignment of lessons, the means employed to secure good order and good lessons, and, not less important, the motives presented in cultivating the moral sentiments, and securing the best results without constant appeal to physical force. This observation should not be miscellaneous and desultory, but consecutive, and according to a plan, so that young ladies, in taking independent charge of a school or a room, would enter upon their duties with

a wise confidence, inspired not only by a theoretical discussion of methods of instruction, but by an acquaintance from observation as well, with a real Boston school, and with the peculiarities of the *Boston school system*.

The only remaining thought in the message, which the Committee desire to consider, is the authority of the City Council, in 1852, to establish such a school for the training of teachers for the public schools of Boston.

His Honor the Mayor says: —

"It is questionable whether such a school as this can be established at all at the public expense."

The City Solicitor says: —

"The Committee can expend the money raised for the support of schools, only for the support of schools of the descriptions which the statutes of the Commonwealth require or authorize to be maintained; and Normal Schools are not of that number."

It is also suggested that this school is a *professional school* in the same sense as a Law School, and cannot be supported as the public charge.

Any doubt concerning the authority of the City Council to establish this school is removed by the Decisions of the Supreme Court of Massachusetts. Some have supposed — and the City Solicitor seems to rest his conclusion upon the same ground — that towns and cities can support only such schools as are specified in the Statutes. The Supreme Court, although ruling upon individual cases, has taken pains to state, very fully and clearly, on general principles, the rights of towns and cities to decide for themselves,

what grades of schools, and how many, they will support. In other words, the law fixes the *minimum* of education, and prescribes what *must* be furnished, under penalty of fine, but *does not limit*. It also gives power to the School Committee to classify pupils in schools, as they shall deem best.

[*Extracts from Supreme Court Decisions.*]

“The establishment of schools for the education, to some extent at least, of all the children of the whole people, is not the result of any recent enactment; it is not the growth even of our present constitutional government, but extends back two hundred years, to the early settlement of the Colony.”

“The question is, whether the description of schools which towns shall be required to maintain, is a description of schools, which alone towns in their corporate capacity have power to support at the common expense. The affirmation of this proposition cannot be maintained.

“On the whole, the Court are of opinion, that the provision of the Revised Statutes, which provides the small amount of schooling which towns are compelled to provide for under a penalty, is not a definition or limit of the public schools which they have the authority to provide for by taxation; but that the provision is to be taken in connection with the broader power given to towns to grant and vote money, as they shall judge necessary, for the support of schools, and also with the whole course of policy and of legislation on the same subject.”—*Chief Justice Shaw, in Cushing vs. Newburyport*, 10 *Metcalf*, 508.

“The law fixes the smallest amount of instruction to be provided by towns, leaving with towns the right to provide such further amount as they may deem proper.”—*Batchelder vs. City of Salem*, 4 *Cushing*, 603.

“The power of general superintendence vests a plenary authority in the committee to arrange, classify and distribute pupils, in such a manner as they think best adapted to their general proficiency and welfare.”—*Chief Justice Shaw, in Roberts vs. City of Boston*, 5 *Cushing*, 208.

The foregoing decisions are conclusive, and yet without them the question would be settled as well on general principles.

The duty of educating is made obligatory upon *towns* and *cities*; not upon the State. Towns can build school-houses; the State cannot without special permissive legislation. Towns can organize and classify and locate any number of schools, prescribe the course of study, the hours, the text-books, number of teachers, their wages and terms of service; the State can do nothing of this kind. The only power on earth that can establish a Primary, Grammar, High, or Normal School in the City of Boston, for the benefit of the city itself, is the City of Boston. The State cannot do it. The Congress of the United States cannot do it.

By *special legislation*, the State has established a few State Normal Schools upon which towns may draw for teachers. Supposing the State had not established these schools, where could a town look for its teachers but to itself? The Statutes compel towns to support schools. This very compulsion presumes that, in doing this, the towns will provide both school-houses and teachers. But where shall a town obtain thoroughly qualified teachers? Who shall give them the special preparation for so important a work? Not the State; not some other town; not some private school or seminary; the Statutes do not know any such institutions. The town itself, being under obligation to provide schools for all the children, must see that suitable provision is made for an adequate supply

of teachers, — adequate, not in numbers only, but in quality and fitness, as well.

The century has gone past when it would be deemed necessary, in any intelligent community in this country, to debate the necessity for special instruction and discipline, on the part of those who are to be the educators of our children. The Committee will not presume upon the intelligence of the School Board of the City of Boston by any such discussion.

THE BOSTON NORMAL SCHOOL NOT A PROFESSIONAL SCHOOL IN THE SAME SENSE THAT A LAW SCHOOL IS A PROFESSIONAL SCHOOL.

The suggestion sometimes heard, that this school has anything in common, in its legal basis, with a Medical School, or a Law School, can hardly have been made upon reflection. A young man enters a Law School for his own personal ends. He pursues his studies, pays his bills, graduates, hires an office, puts out a sign, and waits for clients. His fees may be small or large. No one fixes his income and limits it by rule. He is not educated for the public service; he does not enter the public service. No committee, acting for the public interest, discharges him from his position, or transfers him from one field to another as the public good may demand.

On the other hand, the whole object of this Normal School, so far as the city is concerned, is the preparation of an adequate number of teachers for the public schools of Boston. They are educated solely and wholly for the public good, and are just as much a

part of the public interest as are the Primary or Grammar Schools themselves.

If, however, the city, in educating these young ladies for the public service, fits them for such positions in the educational field as shall be pecuniarily to their advantage, no one will object. We educate them for the sake of the schools, for the sake of the hundreds and thousands of children who look to us for the best possible education that can be given them, during the years devoted to school life; for the sake of the good name of Boston; for the State; for citizenship in the republic. If, in addition to this direct and public benefit, from fifty to one hundred and fifty young ladies, daughters of our citizens, can be made able to take honorable positions, and to receive a liberal compensation, so that they may be able to support themselves and have a little with which to do for kindred who may be dependent upon them, let us not grudge, but rather thank God that his providence is so varied and so comprehensive.

V.

RECOMMENDATIONS.

The order under which this report is presented, directs the Committee to "report such recommendations as may seem wise, for the future action of this Board, respecting the Normal School."

The Committee would recommend, —

1. That the Normal School be continued under its present organization, as a distinct school, with such

regulations and courses of study as this Board shall prescribe.

2. That as early as practicable, the Board seek, through the City Council, accommodations for the school, in connection with some Grammar or Primary School, in order that the Normal pupils may have an opportunity to witness the methods of instruction and discipline in a regularly organized school, and that they may become acquainted with both the general and the special features of the Boston school system.

OPINIONS OF DISTINGUISHED EDUCATORS.

The following correspondence, bearing directly upon the foregoing suggestions, confirms the Committee in their judgment as to the wisdom of these recommendations. The replies are all from men of large and varied experience and observation.

Boston, May 17, 1873.

DEAR SIR:—

Will you have the kindness to answer, very briefly, the following questions,—

1. What special provision does your city make for the education of teachers, or of those who purpose to become such?
2. Have you a class in your High School, in which professional instruction is given, or have you a separate school?
3. Have your Normal pupils any facilities for observing methods of instruction in the various grades of your school?
4. Which, in your judgment, is best,—to have the Normal class a part of the High School, or to make it a distinct school?
5. Do you deem a Normal School, in some form, essential to the highest prosperity of your schools? This subject especially interests our own city just now.

I write you as Chairman of the Committee on the Boston Normal School, and in the interests of education in our city.

With thanks, in advance, for the favor which I ask,

I am,

Very sincerely yours,

CHARLES HUTCHINS.

From the Chairman of the School Committee, Springfield, Mass. : —

SPRINGFIELD, MASS., May 24th, 1873.

MR. CHARLES HUTCHINS : —

DEAR SIR, — In reply to your inquiries, I would say, —

We have a Training School of four schools and six teachers.

No such class in the High School.

No ; only in those four schools, and they are too nearly of the same grade.

We deem a Normal School desirable in cities and all large towns ; and with us it is necessary to provide ourselves with teachers. The State Normal Schools do not furnish enough, and the competition to secure them is great. We would encourage our own young people to qualify themselves for teaching.

After conferring with Rev. Mr. Rice — who has long been a member of our Committee, and is a member of the State Board of Education — I return you these answers to your inquiries.

Yours very truly,

S. G. BUCKINGHAM.

NEW BEDFORD, MASS., June 1, 1873.

DEAR MR. HUTCHINS : —

A simple account of our Training School, which has been in existence for two years, will answer directly the most of your inquiries.

We instituted our Training School by taking a graded Primary School which occupied a building consisting of five rooms, and making it the *practice school* of the Training School, to whose especial purposes we devoted one of the five rooms.

We have no teacher's class in the High School. But we require

such graduates of the High School as desire to become teachers in our service to spend at least one year in the Training School.

The union of the Training School with a regularly organized public school is one of the prime sources of the abundant success which has attended it.

We once had the Normal class as a part of the High School ; *it was, in the main, a failure.*

A Normal School is absolutely indispensable to the highest prosperity of a system of schools. We find it so.

Yours truly,

H. F. HARRINGTON,

Superintendent of Schools.

WORCESTER, MASS., May 22, 1873.

CHARLES HUTCHINS, Esq.,

Ch'n Com. on Normal School, Boston : —

DEAR SIR, — For the education of teachers we have, besides the other public schools, what is called the Normal and Training School.

For several years before the opening of the school, there was a class in the High School, called the Normal class, designed for the preparation of teachers.

The Normal and Training School was organized in the year 1867, to take the place of the Normal class in the High School — more effectually to do its work.

The Normal pupils are not only instructed in methods of teaching, but they are required also to observe the teaching, and practise teaching themselves, in the several grades of school.

From the trial of both, in this city, I am *decidedly* of opinion that a *separate Normal School* is far preferable to a Normal class in the High School.

I think a good Normal School is indispensable to the prosperity of the public schools ; for teachers must either learn correct methods of teaching before they become responsible for a school, or they must experiment with pupils before they can secure good systems of teaching and healthy discipline.

From an experience of five years in this kind of Normal School,

noticing its effect upon young teachers and upon the schools, I am very positive in my approbation of Normal School instruction.

I am very truly yours,

A. P. MARBLE,
Sup't Schools.

CAMBRIDGE, MASS., May 23, 1873.

CHARLES HUTCHINS, Esq. : —

DEAR SIR, — We have a Normal or Training School in which teachers are prepared for their work.

We have *no* class in our High School in which professional instruction is given, but we have a separate school in connection with a Primary School, where instruction in methods can be united with actual practice.

I am decidedly of the opinion that the Normal School should have no connection with the High School, *but that it should be a distinct school.*

I do feel that a Normal School in some form is absolutely essential to secure the highest prosperity of our schools. I have seen the results of our own school for several years, and hence do not hesitate to speak very decidedly upon the various points touched upon in your inquiries.

Very truly yours,

E. B. HALE,
Sup't Schools.

ST. LOUIS, May 29, 1873.

DEAR SIR : —

We support a Normal School in our city for the reason that we must have our city schools taught by teachers who have grown up amid the social culture of our city. The State Normal Schools are filled with pupils from the country, and could not furnish us one tenth the number we need, *nor trained in the ways and methods we require.* It is essential to our school system.

We deem it essential to keep it separate from the High School, because : —

(a.) Its discipline must be far more precise than is practicable in the latter.

(b.) Its instruction must be on a different method.

(c.) The *esprit du corps* so necessary to a Normal School cannot be achieved in it as a *department* of a High School. No department, fitting pupils for a trade or profession, can secure *esprit du corps* in an institution whose main object is general training.

Very respectfully,

W. T. HARRIS,

Supt Public Schools.

NEW YORK, June 16, 1873.

CHAS. HUTCHINS, Esq. :—

DEAR SIR, — I consider a Normal School an essential part of every truly efficient system of Common Schools.

There should be an entire separation of the Normal School from the High School, the objects of the institution being quite distinct, and more especially because the tendency must be, as experience has uniformly shown, to lose sight of the Normal features, and give exclusive attention to the academic.

In my judgment, it is desirable and indispensable that the Normal pupils have an opportunity to observe from day to day the actual work of some regularly organized Primary or other school, to witness methods of instruction, discipline, etc.

Very truly yours,

HENRY KIDDLE,

City Superintendent.

The following extracts are from the forthcoming Annual Report of the School Committee. The first paragraph is from the Report of the Committee on the Girls' High School. The second paragraph is from the general Report.

“After long and mature deliberation, a majority of the School Board deemed it advisable to separate the Normal from the Girls’

High School, and this separation went thoroughly into effect at the conclusion of the regular school year in July, 1872."

"For some years it has been growing more and more evident that this result would ultimately be reached. The number of girls wishing to become teachers does not comprise nearly all of those who desire a High-School education. Experience has proved that both objects cannot be effected in the same school without some loss to the one or the other. At the same time, it seems highly important that the City of Boston should not abandon the practice, so successfully tried in the past, of giving the requisite instruction to those daughters of her citizens who wish to make teaching their profession."

JAMES REED, *Chairman*,
BAYLIES SANFORD,
GEORGE M. HOBBS,
WILLIAM H. LEARNARD, JR.,
RICHARD J. FENELLY,
CHRISTOPHER A. CONNOR,
GEORGE D. RICKER,
JOHN NOBLE.

In closing this report, the Committee feel justified in presenting the following

CONCLUSIONS.

1. The Normal School was established, in 1852, as a part of the Public School System of Boston.
2. It was established by the City Council, on the recommendation of the School Board.
3. No action has been taken by the City Council, since that date, invalidating the legal status of this school.
4. No action, on the part of the School Board, or the City Council, in regard to a High School for girls,

has in any degree affected the foundation of the Normal School.

5. The School Committee united a High School course of study with the Normal School course, and the school came to be called the Girls' High and Normal School.

6. In 1872, the School Board separated the two courses, and returned the Normal School to its original condition, as a separate school. The City Council very properly recognized the importance of this step, and the legal right of the School Board to make the separation, and provided accommodations for the Normal School.

7. The statutes of the Commonwealth, and the decisions of the Supreme Court, seem to remove all doubt as to the legal right of the City of Boston, in 1852, to establish this school, and also as to the legal right and the duty of the School Board to perpetuate the same.

8. The most enlightened educators in the country regard Normal Schools as indispensable to the highest prosperity of the public schools.

9. The School Committee of Boston have decided, for *twenty-one years*, in favor of such a school.

10. The experience of *twenty-one years* has made it manifest that the Normal School should be a distinct institution, devoted wholly to the preparation of eachers.

Most of the cities and large towns in this Commonwealth, acting, as it were, by an educated instinct, have already established schools for this very purpose.

Boston, whose good name has been spoken with honor wherever intelligence and sound learning have value, *will not be first to go backward.*

Respectfully submitted.

CHARLES HUTCHINS, *Chairman*,
JOHN NOBLE,
WILLIAM B. MERRILL,
WILLIAM H. LEARNARD, JR.,
JOHN P. ORDWAY,
MOODY MERRILL,
GEORGE A. THAYER.

Boston, June 25, 1873.

REPORT OF THE COMMITTEE
ON
SCHOOL FOR DEAF MUTES.

REPORT.

The Boston School for Deaf Mutes is now in the fourth year of its existence, and has already awakened an interest and exerted an influence beyond the limits of the city and of the State. In view of the many applications that are almost daily received for information in regard to the nature of the school, and the methods of instruction pursued, it may not be inappropriate to give a brief sketch of its origin and history to the present time.

In the year 1868, the Rev. Dexter S. King, a member of the School Board of Boston, and also a member of the State Legislature, became interested in the instruction of Deaf Mutes in articulation as taught in the Clarke Institute in Northampton, Mass., and conceived the idea of a public day-school for deaf-mute children in Boston, under the direction of the School Board. In the month of May of the same year, at the instance of Mr. King, a committee was appointed by the Board to consider and report on the expediency of establishing such a school. Some inquiry was instituted, and some facts gathered, but no report was made. In January, 1869, the subject was again committed to the same gentlemen, and in April, Mr. King, the chairman of the committee, reported "that such a school ought to be established,

for the reason that there are enough deaf-mute children in the city entirely destitute of the means of education to form such a school, and whose friends would joyfully improve the opportunity of sending them to school; also on the ground of economy. The portion of State aid to deaf mutes, paid by Boston, if applied to the education of her beneficiaries alone, would amount to more than four hundred dollars per annum for each pupil. With a school in Boston, the cost for each pupil would not exceed one hundred dollars per annum. . . . The education acquired by the proposed plan between the ages of four and eight years would be equal to that ordinarily acquired between the ages of sixteen and eighteen years."

The committee urge that the school be made a public benefit beyond the limits of Boston, by offering its privileges to children in surrounding cities and towns, for whose tuition a charge might be made of one hundred dollars per annum, but which the State would provide for in cases of inability to pay on the part of parents or guardians. Children attending such a school would be supported at their own homes. The committee submitted the following orders, which were adopted:—

I. *Ordered*, That a school for deaf mutes be opened under the direction of this Board, at the commencement of the next school year.

II. *Ordered*, That a committee of seven be appointed, to be styled the Committee on the School for Deaf Mutes.

III. *Ordered*, That the committee be authorized to engage a teacher on probation, at a salary not ex-

ceeding one thousand dollars; the term of service to commence on the first of September next.

IV. *Ordered*, That there be allowed and paid a sum not exceeding three hundred dollars, to be expended at the discretion of the committee in preparing a teacher for special work.

V. *Ordered*, That the committee prepare and report rules and regulations for this school for the consideration of this Board.

In 1868 the State Legislature, with the view of extending the opportunities for education to a larger number than before, passed the following act, allowing State beneficiaries to be sent to Northampton as well as to Hartford, at the discretion of the Governor.

(CHAPTER 200.)

AN ACT concerning the education of deaf mutes.

Be it enacted, &c., as follows:—

SECTION 1. The Governor, with the approval of the Board of Education, is hereby authorized to send such deaf mutes or deaf children as he may deem fit subjects for instruction at the expense of the Commonwealth, to the American Asylum at Hartford, or to the Clarke Institution for Deaf Mutes at Northampton, as the parents or guardians may prefer.

SECT. 2. The Governor is hereby authorized to draw his warrant for such sums as shall be necessary to pay for the instruction and support of such pupils as may be sent to said institutions respectively, pursuant to the provisions of the preceding section.

SECT. 3. This Act shall take effect upon its passage.

[Approved May 14, 1868.]

In 1869, this Board having determined on the establishment of a school in Boston, another act was passed providing that pupils might be sent to that school as well as to the institutions at Hartford and Northampton.

(CHAPTER 333.)

AN ACT to amend chapter two hundred of the Acts of the year eighteen hundred and sixty-eight, concerning the education of deaf mutes.

Be it enacted, &c., as follows:—

Section one of chapter two hundred of the acts of the year eighteen hundred and sixty-eight is hereby amended by inserting after the word "Northampton," the words "or any other school for deaf mutes in the Commonwealth."

[Approved May 28, 1869.]

The liberality of the Commonwealth in her provisions for this class, and the earnest desire that all may share in the opportunities thus provided, is well illustrated in the following extract from the thirty-fourth annual report of the State Board of Education, by the Secretary, Hon. Joseph White:—

"I take this opportunity to invite the special attention of school committees, teachers, and ministers of the gospel,—in fact, of all friends of education,—

to these several schools, and urge that they make a careful inquisition in their respective towns and neighborhoods, to the end that no deaf-mute child in the Commonwealth be deprived of the education which she freely proffers through the instrumentality of these schools. This education she offers, not as a charity, but in the discharge of a duty which she owes and acknowledges, to provide the means of education for every child within her borders, and none the less, but rather the more, to the weak and the unfortunate."

Under the authority conferred by the School Board the committee proceeded to canvass the city to ascertain how many children would be likely to attend the school. While it is not supposed that all the deaf-mute children in Boston were found, it was ascertained, that apart from a few whose parents were able to support them at school away from home, there were fifty children who would be considered wards of the State, and whose school expenses, at either Northampton or Hartford, would be paid by the Commonwealth. Of these, twenty-two were in the schools named, and twenty-eight were at home, with no one able to render them aid in their search for an education. The twenty-two children were supported, at an annual expense to the State of a little more than four thousand dollars, while Boston was at the same time paying a tax of nine thousand dollars towards the State appropriation for the education of deaf mutes. The annual support of all the deaf-mute children in Boston would cost, at Hartford, eight thousand seven hundred and fifty dollars; at Northampton, twelve

thousand five hundred dollars, besides extra expenses to be defrayed by parents for travelling and other incidentals. To educate the whole of these children, including those of some of our heaviest tax-payers, would not cost over about half of the latter amount.

Owing to the difficulty in procuring suitable rooms in a central locality, the school was not opened until November 10th, 1869, and for a time was kept in two divisions, — one on East street, and the other in Somerset street. Better rooms were soon after found at No. 11 Pemberton Square, to which the children were removed, and which have since been occupied by the school. Thirty-six applications for admission were received at the opening of the school, but owing to the want of room and the impossibility of immediate classification, only twenty-five were at first admitted. The school was organized by the appointment of Miss Sarah Fuller as Principal, and Miss Mary H. True and Miss Ellen L. Barton as Assistants. Miss Fuller, a lady of long experience as a teacher, was transferred from the Bowditch School, and before entering upon her duties spent three months at the Clarke Institute, besides visiting the institutions in Hartford and New York city for the purpose of studying the methods of instruction pursued in those schools. The others had each been employed in teaching deaf mutes, one at Northampton, and the other in a private family near the city.

The system of instruction adopted is that known as the "German" method, invented by Samuel Heinicke, and introduced into his school at Leipsic, in 1777. The sign language is not taught, and the manual

alphabet of Dalgarno is only employed for temporary purposes, with the younger children. The pupils are taught to speak and to read the language of others from the lips. While this is found to be entirely practicable with almost all congenital mutes, whose vocal organs are not deformed, it is doubly so with the much larger class of semi-mutes and semi-deaf, whose hearing has been impaired or destroyed in childhood or infancy, and who are thus cut off from education in ordinary schools. While some have lost their hearing in infancy and retain no ideas of sounds, many others have become deaf at five, six, eight, or ten years of age, after having acquired language to some extent, or even fluent speech, but on losing their hearing soon forgot all they had learned, and resort to signs as a means of communication. Another class is the semi-deaf, who can hear to some extent, but not the ordinary tones of the voice; and though able to hear words spoken through a tube in a loud tone, as they have never learned spoken language the words convey as little meaning to them as if uttered in a foreign tongue. A day school like ours, which is believed to be the first of its kind in this country, appears peculiarly adapted for instruction in articulation, on account of the advantages enjoyed by children who live at home, where they are surrounded by hearing persons, and are thus incited to use the power of speech as they acquire it in school, over those in the same class congregated in an institution where the temptation to communicate by signs out of school-hours is so constant, that they fail to improve by practice in speaking, as they might otherwise do. At home, too, they

form a part of the family circle, with common sources of occupation and amusement; and as they become able to communicate with those about them in a common language they gradually cease, both in feeling and in fact, to belong to a peculiar and unfortunate class, shut out by their infirmities from the world, and unable to mingle in the enjoyments of social life.

In January, 1871, Mr. King retired from the Board; but his interest in the school, which was established, in a great measure, through his energy and perseverance, continued unabated; and his daily visits were not omitted until just before his death, which occurred a few months later.

In 1871 an important element was added to the method of instruction employed in the school, which has exerted a marked influence on its progress and success. This was the system of "visible speech" invented by Prof. Alexander Melville Bell, of London.

"The fundamental principle of the system is, that all relations of sound are symbolized by relations of form. Each organ and each mode of organic action concerned in the production or modification of sound has its appropriate symbol; and all sounds of the same nature, produced at different parts of the mouth, are represented by a single symbol, turned in a direction corresponding to the organic position."

The first application of the system to the education of deaf mutes was made in 1869, by Mr. A. Graham Bell, a son of the inventor, with a small class in a private school kept by Miss S. Hull, in South Kensington, England. "No difficulty was found in giv-

ing the idea of the symbols to four children, the eldest twelve, and the youngest seven years of age, and nearly all the elementary sounds of English were obtained from them *in few days*." Mr. Bell was invited to visit Boston, and was employed during the months of April and May in imparting the system to the teachers and pupils of its deaf-mute school, with results equally gratifying and surprising. On the 13th of June a public exhibition of the school was given, and it was shown that the very youngest children had comprehended the meaning of the symbols. Taking the school as a whole, it was found that during a single month over three hundred English sounds, which the pupils had formerly failed to utter by imitation, had been obtained by "visible speech." Class illustration was given of the pronunciation of syllables with differences of accent and quantity, and individual illustration of the perfect utterance of words and sentences. So entirely satisfactory were the results of the exhibition to the committee, as well as to a large number of prominent educators who witnessed it, as fully to convince several of the friends of the school who had previously distrusted the ability of those who had never heard, to articulate intelligibly, and to determine the committee on the adoption of "visible speech" into the method of instruction, as one of its most valuable agencies.

At the beginning of the last year, Miss True, one of the assistant teachers, resigned her position, having been invited to assume the charge of a deaf-mute child in a private family in England. To fill the vacancy thus created, and also to provide an additional

teacher, required by the growing wants and numbers of the school, Miss Ella C. Jordan and Miss Kate D. Williams were received and placed in training under the eye of the principal, for several months, to qualify them as assistants in the special work of deaf-mute instruction, to which positions they were subsequently appointed. The progress of the school has been gratifying and encouraging in the highest degree, notwithstanding many adverse circumstances. During the past few months the epizoötic disease interrupted the running of horse-cars for many days. After the great fire in November, the streets of the city were crowded and obstructed for weeks, to an extent that rendered foot travel difficult and dangerous. To these may be added the unusual severity of the winter and the prevalence of small-pox, and when it is remembered that the children come from all parts of the city, including East Boston and South Boston, as well as from the surrounding towns, it is worthy of remark that the average of attendance should have been so good, and that no accident has occurred to any pupil in going to or from school. Perhaps it may be claimed as one of the advantages of a day school, that the daily walk teaches children, at an earlier age than they would otherwise learn, to take care of themselves, and to go abroad with safety. As a precaution against straying and getting lost, each of the younger pupils is furnished with a medal, which is worn suspended from the neck, and on one side of which is engraved the name and residence of the child, and on the reverse the words "Boston School for Deaf Mutes, No. 11 Pemberton Square." The child is fully in-

structed as to the use of the medal, and if lost or bewildered in the street, he has only to show it to a passer-by, to be at once set right or placed in charge of the nearest policeman, whose duty it becomes to accompany him to his home.

CLASSIFICATION AND COURSE OF STUDY.

The school is divided into two sections. The first, second, and third classes comprising the first section, the fourth, fifth, and sixth classes the second section. These sections are so separated as to constitute, in fact, distinct schools, the children of one section not coming in contact with those of the other, either during school hours or at recess.

In the first section instruction is given orally, as in hearing schools, the pupils being required to read the lips of the teacher. But in the second section the adoption of Prof. A. Melville Bell's system of visible speech as a means of teaching articulation has rendered advisable a change in the plan of instruction.

Mr. A. Graham Bell insists that "with congenital deaf mutes and all who have no knowledge of speech, the pronunciation of words and sentences should be deferred until the vocal organs have been well drilled on elementary sounds and exercises." Hence, in this department the general education is now carried on by means of writing; articulation and lip reading being taught only in connection with visible speech.

FIRST SECTION.

The three classes in this section have daily drill in articulating elementary sounds and combinations, and also in exercises for the improvement of the voice.

The first class consists of six pupils, who are studying history, geography, mental and written arithmetic, grammar and physiology. Drawing is taught according to the plan recently introduced into the Boston schools by Mr. Walter Smith, art-director for the State of Massachusetts. In addition to their regular articulation exercises, these pupils are required to read from the printed page.

The progress of this class has been highly satisfactory.

The second class consists of seven pupils, differing widely in attainments, but classed together because time cannot be given to individual instruction.

The correct use of language is their principal study, and they have daily lessons in arithmetic, geography, articulation and lip-reading.

Uncorrected specimens of their compositions are appended to show their use of language.

The chief work of the third class is the acquirement and use of language. They also have a daily drill in articulation and lip-reading. Short lessons are given each day from Hagar's Primary Arithmetic.

The progress of this class has been materially affected by the illness and absence of their regular teacher. They are doing well, and are steadily gaining in ability to express themselves and to understand communications made to them by others.

SECOND SECTION.

The pupils of this section, twenty in number, possessed no knowledge of language, written or spoken, before entering the school.

All were either born deaf, or lost hearing in infancy. Three girls and one boy seem to have a slight perception of very loud sounds. An hour each day is devoted to articulation and lip-reading by means of visible speech, and the remainder of the time to the acquirement of written language. No lesson exceeds half an hour in length, and each articulation exercise is of fifteen minutes' duration. In order to enable these pupils to obtain control of the movements of the tongue, they are required to watch their own mouths in a mirror. They can now pronounce the majority of the English consonants, and can describe by signs the position of the vocal organs in forming them. The sounds obtained are combined into simple syllables which they are required to repeat from the teachers' lips, and from the visible speech symbols. Nearly all can vary the voice in respect to pitch, force, and duration.

In addition to the ordinary class work in articulation, the Principal gives individual instruction to each of these pupils.

At Mr. A. Graham Bell's suggestion, the mental development of these children is carried on by means of writing, on the principle indicated by George Dalgarno in the year 1680, namely, that "a deaf person should be taught to read and write in, as nearly as possible, the same way that young ones are taught to speak and understand their mother tongue."

Accordingly the teachers write to them just as they would talk to a class of hearing children.

Principal attention is directed to the acquirement of the ordinary forms of language rather than to the enlargement of the child's vocabulary.

The pupils of the fourth class readily answer questions beginning with Who, Whose, What, Where, and How many. They also write simple descriptions of pictures. They have some knowledge of numbers, and add numbers in two, three, and four columns.

Their comprehension of written directions may be shown by the following sentence written upon the slate a few days since: "Leta may go into the entry and pick up the paper that is on the floor, bring it here, and put into the basket."

The word pick was unfamiliar to the child; but as soon as the teacher explained its meaning she immediately obeyed the direction.

The fifth class are making very gratifying progress in the acquirement of language.

They write answers to questions beginning with Who, Whose, What and Where, describe actions, and obey a great variety of directions.

The following may illustrate: "Go to my desk, get a large book and put it on the bench." "Go to Mary's desk, get her pencil and put it behind the large slate."

The sixth class consists of the youngest children, who have been the shortest time under instruction. It is separated into two divisions. The first have a vocabulary of more than a hundred and seventy words, which they understand when formed into

sentences. Written directions like the following are readily understood and obeyed by them : —

“Put the book on the bench and sit on the settee.”

“Put the book under the chair by the window.”

They answer in writing questions beginning with What and Where.

COMPOSITIONS.

“BOSTON, Feb. 4th, 1873.

“DEAR LILLIE:— I hope I will have a nice time in July and August and I will shoot some fire-crackers in fourth of July.

“My baby is one years old. Minnie wants to see you. In April you will come to school. In April it is warm weather. I have two sleds and my brother has two, the name of my sled is lark, and the other has no name on it. I do not know the name of my brother's sled he has one sled without any name. The other has a name. My sister has one sled. I did not see the name of my sister's sled. Have you any sled. I think you have a sled. I coast in Parker place. It is a high hill. I have a double runner at home. Miss Fuller and Miss Bond said that they want to see you very much. Jennie had a bad cough last week.

“When you come down here Jennie says that she wants to kiss you. Jennie is writing a letter to her sister. I got this Little Paper and a postage stamp in my father's apothecary store.

“When Jennie had a bad cough I wrote a letter to her and I gave it to her father at the Journal office and Jennie did not write to me Because she did not want to write a letter. I think she knows how to write a letter to her sister. Charlie has not come to school. Miss Fuller thinks he is sick or has a bad cough. I have a gold ring and a book and some nice candy and a apple and a orange and some nuts and a bottle of cologne.

“Will you write me a letter. I will write you another letter some day? All of the children want to see you very much and kiss you.

“from

“HARRY E. BABBITT.”

Harry E. Babbitt, 11 yrs. Deaf at 5 yrs. One year at Northampton. Entered Bcston School in October, 1870.

“BOSTON, Feb, 4, 1873.

“DEAR ALVAH:— I am very glad that you are well. Charlie is very sick. Charlie did not come to school to-day. Miss Barton will come to school. Miss Fuller says that she loves you.

“Miss True lives in England. I went to come to school to-day. Charlie will come to school sometime. Miss Bond says that she loves you. The ladies are come to school. The children will come to school to-day. Miss Jordan loves you. Jennie Winslow loves you. You are a good boy. I cannot see Alvah. Miss Barton says that she loves you. Please write a letter to me.

“FROM DANIEL O'CONNELL.”

Daniel O'Connell, 13 years of age. Deaf at 8 mos. Entered Boston School Nov., 1869. No previous instruction.

“This is a picture of a home far away in the highlands and hills. The picture represents a little baby asleep in a rude cradle, while a man and woman are looking on; they appear to be the father and mother of the little baby. A dog sits at the head of the cradle, lazily gazing at a sheep which is lying in front of a fire made of stumps and logs. A hen and three chickens are scratching in the ground, for there are no floors or carpets in the cabins of the people who live in the hills that are in the highlands.”

Lillian G. Smith, 10 years. Deaf at 7 years. Entered Boston School Sept., 1872. Had two years' instruction before becoming deaf.

“WHY SHOULD ANIMALS BE KINDLY TREATED?”

“Animals are our daily companions. They are a constant source of pleasure and usefulness, and in culling a few out of the

many reasons for treating them with kindness, we but give expression to their own voiceless but eloquent pleadings. It may be objected that their power of feeling insult and injury is inferior to ours. But because they cannot speak, are we to infer that they cannot *feel*?

“No: the fountain of feeling and passion is springing always, even when the river of outward expression is invisible.

“God has made speech one of the chief grounds of the superiority of man to animals, and are we to treat unkindly the creatures whose condition might have been ours — would have been ours, but for his goodness?

“We have but to picture to ourselves what our condition would be should speech be taken from us, and should we too be compelled to suffer cruel treatment without being able to utter a word of remonstrance — to feel the value of this noble gift, and the high claim which the want of it makes upon our sympathy.

“One language alone is theirs — that of look and gesture; but it is a silent language, which only those skilled in reading it can interpret aright; yet it is often most expressive.

“Who that has watched the eager, intelligent countenance of some faithful dog, or listened to the soft cooing of doves to each other, will deny this? Animals are as capable of anger, fear and love, as we are, and there is a sensitive shrinking from an undeserved blow which all but the most heartless must see. Their *helplessness* gives them another claim upon our sympathy. Domestic animals cannot provide for themselves, but depend upon us for food and shelter. They are capable of making a full return for this by their service and love.

“If *we* were thus helpless, should we not think it the height of cruelty to have our service rewarded by exposure and starvation?

“Few animals are incapable of being useful to us. The horse draws our heavy loads, and carries us swiftly from place to place. The cow furnishes us with food and drink; the sheep with clothing; and the dog protects us with unswerving fidelity.

“This faithfulness on the part of these dumb brutes is another reason for being always gentle with them. If a friend remains faithful to us through all changes, and even amid neglect on our part, do we not consider it almost a crime to treat him with un

kindness? And why should these dumb friends of ours receive less favor?

"Cruelty to animals is a source of *degradation* to us. By it we place ourselves far below them and do violence to the purest instincts of our nature. One who is cruel to animals is likely to carry the principle into his intercourse with others.

"If we had no higher reason our own self-respect and regard for the opinions of others require that we should be kind to them.

"But there are reasons far higher and nobler than this to a thoughtful mind: they are God's work, and what his hand has touched ought not to be marred by ours. Their physical organization bears a close resemblance to ours.

"What should we think of a person who should employ himself in defacing and tearing down a beautiful edifice into which the labor and skill of the best architects in the world had been gathered — merely to gratify his own passion? And yet this is just what we do when we maltreat the beautiful edifice of the animal frame, designed by the most skilful of architects, and utterly impossible for us to imitate. Silent though they are, their condition speaks to us with a thousand tongues. By their silence, their helplessness, their usefulness, their faithfulness, and by the impress which they bear of the Creator's hand, they plead with us to treat them with forbearance and kindness. Shall we refuse to listen to their five-fold petition, and degrade ourselves by treating them with cruelty, or shall we receive them as God's best gift to us, and make their lives happy as well as useful?

"A thousand mute but intelligent creatures wait our reply. Shall we turn coldly from their upturned faces, or shall we look upon them with greater gentleness?

"Let us remember that even these little acts of cruelty or kindness are noticed in Heaven, and will yet receive their due reward.

"ALICE C. JENNINGS."

Aged 22 years 2 months. Lost hearing at 8 years of age. Admitted September 19, 1870. Previously instructed at home by her family.

For the above composition, Miss Jennings, of the First Class, was awarded one of the highest prizes offered in February, by the Society for the Prevention of Cruelty to Animals, to the pupils of the public and private schools throughout the State for the best compositions on the subject; "the merits to be determined by the treatment of the subject, rather than by the penmanship or grammatical construction."

The following is a synopsis of the present number and condition of the school:—

SARAH FULLER, *Principal*. Annie E. Bond, Ella C. Jordan, Kate D. Williams, Mary F. Bigelow (in place of Ellen L. Barton, resigned), assistants.

Boys	.	.	.	.	.	.	.	20
Girls	.	.	.	.	.	.	.	27
Whole number of pupils	.	.	.	.	.	.	.	47
Belonging in Boston	.	.	.	.	.	.	.	32
“ “ Auburndale	.	.	.	.	.	.	.	1
“ “ Brookline	.	.	.	.	.	.	.	1
“ “ Cambridge	.	.	.	.	.	.	.	2
“ “ Charlestown	.	.	.	.	.	.	.	3
“ “ Dedham	.	.	.	.	.	.	.	1
“ “ Franklin	.	.	.	.	.	.	.	1
“ “ Jamaica Plain	.	.	.	.	.	.	.	1
“ “ Lawrence	.	.	.	.	.	.	.	1
“ “ Lowell	.	.	.	.	.	.	.	1
“ “ Natick	.	.	.	.	.	.	.	1
“ “ Roslindale	.	.	.	.	.	.	.	1
“ “ Providence, R. I.	.	.	.	.	.	.	.	1

Eleven of the pupils are congenitally deaf; thirty-six deaf from disease, and three from causes unknown.

Of the number deaf from disease, four have partial hearing, and use a tube with advantage. Eleven have retained speech to a greater or less extent, but no hearing. Six other pupils can hear very loud sounds, but cannot use a tube.

ADMISSION.

Any deaf-mute child over five years of age, residing in Boston, not mentally or physically disqualified, is entitled to admission.

Children residing out of Boston will be admitted, subject to the preceding conditions, and will be charged the average cost per pupil for tuition, unless received as State beneficiaries.

Parents or guardians desiring the admission of children, as State pupils, can obtain the blank form of application and other instructions at the school-rooms, No. 11 Pemberton Square, or at the office of the Secretary of State.

Children from other States will be received, subject to the above conditions, on the payment of tuition, or upon warrants from the executives of such States.

Communications and letters may be addressed to the Principal, Miss Sarah Fuller, No. 11 Pemberton Square, Boston.

Alphabetical List of Pupils Admitted to this School, with Date of Admission, etc.

<i>Name.</i>	<i>Residence.</i>	<i>Time and place of Instruction before entering Boston School.</i>	<i>Time of entering Boston School.</i>	<i>Age at time of Admission.</i>	<i>Cause of Deafness.</i>
Acheson, Pauline M.	West Roxbury.	.....	Sept. 3, 1872.	4 yrs. 10 mos.	Congenital.
* Blanchard, Isaac A.	Charlestown.	3 yrs. at New York Inst.	Nov. 15, 1869.	15 "	Inflammation of brain at 9 mos.
Babbitt, Harry E.	Boston Highlands.	1 yr. at Clarke Inst.	Oct. 4, 1870.	8 " 11 "	Fevers at 5 yrs. 4 mos.
* Benson, Margaret J.	Hyde Park.	.....	Mar. 25, 1872.	8 "	Congenital.
Bragg, Jane A.	Olneyville, R. I.	.....	April 10, 1872.	10 " 1 "	Typhoid fever.
Bowen, Timothy.	Boston.	4 yrs. at Dublin Inst.	May 7, 1872.	.....	Probably a fall at 4 yrs.
Cabalan, Jeremiah.	Boston.	.....	Nov. 10, 1869.	7 "	Convulsions at 6 mos.
* Coughlan, John.	Boston.	.....	Nov. 10, 1869.	5 " 7 "	Scarlet fever at 3 yrs.
Coughlan, Michael.	Boston.	.....	Nov. 10, 1869.	8 " 5 "	Scarlet fever at 2 1-2 yrs.
* Cross, Samuel S.	Beverly.	6 yrs. at Hartford Inst.	Dec. 5, 1870.	16 " 1 "	Congenital.
* Carroll, Mary E.	Charlestown.	2 yrs. at Hartford Inst.	Nov. 10, 1869.	12 " 10 "	Ulcers at 8 mos.
Collins, Emma.	Boston.	.....	Dec. 13, 1869.	7 " 6 "	Ulcers at 16 mos.
Clarke, Lisé E.	Boston Highlands.	.....	April 22, 1872.	5 " 10 "	Congestion of brain in infancy.
Chaffin, Lizzie E.	Brookline.	.....	April 10, 1871.	6 "	Diphtheria at 1 yr.
Daily George E.	East Cambridge.	.....	May 2, 1870.	6 " 4 "	Scarlet fever at 1 1-2 yrs.
* Driscoll, Julia A.	East Boston.	3 yrs. at Hartford Inst.	Jan. 19, 1870.	18 " 4 "	Severe sickness at 3 yrs.
Daniell, Maria W.	Boston Highlands.	Public School till 17 yrs. of age.	Oct. 2, 1871.	13 " 11 "	Scarlet and Catarrhal fever at 4 yrs.
Finnegan, Joseph.	Boston.	.....	Nov. 22, 1869.	9 " 6 "	Congenital.

Flagg, Isabel C.	Boston.	Public School till 15 yrs. of age.	Nov. 30, 1869.	15	"	9	"	Fever at 1 yr.
* Forbes, Alice V.	Sherburne.	3 mos. private teacher.	Nov. 30, 1869.	6	"	5	"	Spotted fever at 1 1-2 yrs.
Gates, Vesta.	East Boston.	.....	Sept. 26, 1872.	8	"	11	"	Congenital.
Gates, Carrie M.	East Boston.	.....	Oct. 1, 1872.	5	"	6	"	Congenital.
Gerry, Alexander W.	Charlestown.	4 yrs. at Hartford Inst.	Sept. 23, 1872.	13	"	6	"	Congenital.
* Hargrave, Albert C.	East Boston.	2 yrs. at Hartford Inst.	Nov. 15, 1869	14	"	10	"	Brain fever at 4 yrs.
* Hayward, Fred.	Malden.	.....	Jan. 17, 1870.	21	"			
Hurley, Jeremiah.	East Cambridge.	.....	Jan. 10, 1870.	12	"	5	"	Congenital.
Harkins, Charles J.	Boston Highlands.	.....	Jan. 10, 1872.	9	"	5	"	Sickness at 2 yrs.
* Harper, Fannie.	East Boston.	.....	Jan. 4, 1870.	5	"			
Howes, Jane A.	Boston.	.....	Jan. 31, 1870.	9	"	2	"	Severe cold at 2 yrs.
Jennings, Alice C.	Newton.	At home.	Sept. 19, 1870.	19	"	6	"	Scarlet fever at 8 yrs.
* Kinyon, Ada J.	Providence, R. I.	.....	Jan. 2, 1870.	10	"	1	"	Severe sickness at 8 months.
Kenny, Honora.	Boston.	.....	Jan. 2, 1870.	7	"	1	"	Sickness at 1 year.
* Kenny, John S.	Woburn.	.....	Oct. 18, 1870.	7	"	9	"	Fall at 3 years.
Kenny, Isabella.	Boston Highlands.	.....	Nov. 16, 1871.	8	"			Unknown.
Kimarten, Sarah.	Charlestown.	.....	May 27, 1872.	7	"	9	"	Sickness at 2 years.
Keeting, Charles W.	Natick.	Public School till 7 yrs. of age.	Feb. 15, 1872.	7	"	10	"	Typhoid fever at 7 years.
Lynch, Michael.	Boston.	.....	April 18, 1870.	8	"	11	"	Severe sickness at 9 months.
* Linehan, Mary A.	Boston.	2 yrs. at Hartford Inst.	Nov. 10, 1869.	14	"	3	"	Injury upon head at 2 1-2 years.
Leavitt, Annie R.	East Boston.	.....	Nov. 1, 1870.	6	"			Shock from fall in infancy.
Mullen, Martin B.	South Boston.	.....	Nov. 11, 1869.	7	"	10	"	Congenital.
Mullen, Patrick M.	South Boston.	.....	April 8, 1872.	5	"	3	"	Congenita

Alphabetical List of Pupils, — Continued.

<i>Name.</i>	<i>Residence.</i>	<i>Time and place of Instruction before entering Boston School.</i>	<i>Time of entering Boston School.</i>	<i>Age at time of Admission.</i>	<i>Cause of Deafness.</i>
Mulvey, John.	Boston.	.....	Nov. 10, 1869.	6 yrs. 4 mos.	Convulsions at 11-2 years.
* Murphy, Ignatius.	South Boston.	.....	Nov. 15, 1869.	7 " 5 "	Congenital.
* Merry, Charles G.	East Boston.	.....	Dec. 13, 1870.	11 " 9 "	
Marshall, Ida L.	Lowell.	.....	Nov. 15, 1869.	7 " 2 "	Sickness in infancy.
* McDonald, Catharine.	Boston.	3 yrs. at Hartford Inst.	Nov. 10, 1869.	13 " 5 "	Fever at 11-2 years.
Murphy, Mary E.	Boston.	..	June 4, 1872.	10 " 1 "	Scarlet fever at 4 years.
Moore, Ella D.	Lawrence.	1 yr. Pub. Sch., 2 yrs. Clarke In.	Sept. 6, 1870.	12 " 8 "	Scarlet fever at 6 years.
* Mendoza, Leah.	Boston Highlands.	18 mos. in London, England.	May 1, 1871.	11 " 11 "	Congenital.
Noonan, John.	West Roxbury.	.....	Nov. 1, 1871.	7 " 10 "	Fever at 13 months.
O'Connell, Daniel.	Boston.	.....	Dec. 6, 1869.	10 " 3 "	Severe sickness at 8 months.
Orenti, Alvah W.	East Boston.	.....	Nov. 15, 1869.	6 " 3 "	Scarlet fever at 4 years.
† O'Harra, Julia.	South Boston.	.....	Nov. 10, 1869.	8 " 6 "	Congenital.
O'Brien, Catherine.	Boston.	.....	June 27, 1870.	Suppose 8 yrs.	
Peirce, Louise F.	Middleboro.	Pub. Sch. till 16 yrs. of age.	May 19, 1871.	16 yrs. 9 mos.	Vaccination at 3 years.
* Roberts, John.	Boston.	.....	May 31, 1870.	5 " 3 "	Congenital.
Ryan, Hannah.	South Boston.	.....	Nov. 10, 1869.	8 " 2 "	Scarlet fever at 6 months.
Robinson, Harriet F.	Boston Highlands.	5 yrs. Hartford, 2 yrs. Clarke In.	Sept. 6, 1870.	15 " 6 "	Congenital.
Reilly, Mary J.	Boston.	.....	Sept. 25, 1871.	5 "	Congenital.
* Saul, Willie H.	Salem.	1 yr. at Hartford Inst.	Nov. 15, 1869.	19 " 9 "	

* Slattery, Patrick.	Boston.	6 yrs. at Hartford Inst.	May 4, 1870.	15	"	10	"	Convulsions at 18 months.
Sawyer, Fannie L.	Charlestown.	.....	Nov. 15, 1869.	10	"	7	"	Dropsy on brain at 3 months.
* Sheehan, Annie.	Boston.	.....	Jan. 11, 1870.	14	"			
* Spillane, Mary.	East Boston.	6 yrs. at Hartford Inst.	Sept. 9, 1870.	13	"	5	"	Brain fever at 4 years.
Smith, Lillian G.	Franklin.	Pub. Sch. 1 1-2 year.	Sept. 9, 1872.	9	"	8	"	
Thomas, Letta C.	East Boston.	.....	Nov. 14, 1870.	7	"	10	"	Whooping-cough at 6 months.
Taylor, George D.	Dedham.	.....	May 17, 1871.	20	"	4	"	Injury at 6 months.
Tripp, George E.	Boston.	.....	Nov. 22, 1869.	6	"	2	"	Scarlet fever at 2 years.
Winslow, Jane.	Boston.	1 year private teacher.	Nov. 23, 1869.	8	"	11	"	Abscesses in head at 6 months.
White, Annie L.	East Boston.	.....	Oct. 17, 1870.	6	"	9	"	Probably Diphtheria at 4 months.
White, Henry.	Boston Highlands.	5 years at Hartford Inst.	Sept. 20, 1870.	15	"			Typhoid fever at 5 years.
Wood, Frank A.	Boston.	.....	Sept. 8, 1870.	7	"	9	"	
* Young, William.	East Boston.	4 years at Hartford Inst.	Nov. 23, 1869.	16	"	9	"	Convulsions at 13 months.

* Not now attending the School. † Deceased.

The committee acknowledge with great pleasure the widespread interest that has been manifested in the school from the outset, not only in Boston, but in many other parts of the State. This has been shown by frequent letters of commendation from different sources, and by the large number of visitors to the school, some of whom have left behind them substantial tokens of their approval, by donations of money and clothing, placed in the hands of the Principal, for the benefit of pupils whose parents are in indigent circumstances. A check for fifty dollars was kindly sent by one gentleman, ten dollars by a lady; and a gentleman, well-known for his benevolence, at one time gave to Miss Fuller a discretionary order on a clothing-house for such articles as might be required by the more needy children. Among other expressions of good will should be mentioned a gratuitous copy of the "Silent World," for two years, through the courtesy of its publishers.

The committee wish also to express their sense of the zeal, fidelity and patience of the Principal and assistant teachers, and of their diligence and devotion to their several duties. In all respects they deserve our highest commendation.

GEO. F. BIGELOW, *Chairman*,
HENRY S. WASHBURN,
IRA ALLEN,
LUCIUS SLADE,
NATH'L B. SHURTLEFF,
SAMUEL B. CRUFT,
FRANK B. CLOCK.

APPLICATION FOR THE INSTRUCTION OF DEAF MUTES.

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TO HIS EXCELLENCY THE GOVERNOR : —

I, _____ of, _____, in the County of _____, and Commonwealth of Massachusetts, respectfully represent to Your Excellency, that my *
aged _____ years, is a DEAF MUTE, and cannot be properly instructed in the Public Schools of this Commonwealth; and that I am unable, in addition to my other necessary expenditures, to defray the expense attending its instruction and support. I therefore respectfully request that your Excellency will send it either to the American Asylum at Hartford, the Boston School for Deaf Mutes, or to the Clarke Institution at Northampton.

(Signed)

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The undersigned, being acquainted with _____, a resident of this _____, are of opinion that the foregoing statement made by him is true, and that he is entitled to the benefit of the legislative appropriation for the education of deaf and dumb persons.

} *Selectmen of*
|
{

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I hereby certify that the above-named _____, a deaf mute, is free from all contagious diseases, and, as I believe, from

* Insert the name of son, daughter, or ward.

all immoralities of conduct; is neither sickly, nor mentally weak, and is a fit subject for instruction at the expense of the Commonwealth. M. D.

NOTE. — The first of the above declarations must be signed by the parent or guardian of the applicant; the second, by the selectmen or a majority of them, of the town, or by the mayor of the city where the applicant resides; and the third, by the family physician, or some other competent medical practitioner. In case the request for admission is granted, the parent or guardian of the proposed beneficiary will be forthwith notified, and a Warrant will be forwarded to the Principal. The time for admitting pupils is at the close of the summer vacation, — at Hartford, on the second Wednesday in September, and at Northampton, on the third Wednesday in September, when classes are formed. Pupils can be admitted to the Boston School at any time.

 *The parent or guardian will answer questions below.*

QUESTIONS TO BE ANSWERED BY PARENT OR GUARDIAN.

1. Name of parents.
2. Residence.
3. Birthplace of parents.
4. Were they deaf and dumb?
5. Have they other children deaf and dumb?
6. Name of child.
7. Birthplace of child.
8. Was the child born deaf and dumb?
9. Has the child ever spoken?
10. If it has, when was hearing lost?
11. What was the cause?
12. Has the child ever been to school?
13. How much has the child been taught?
14. Is it preferred to have the child sent to the American Asylum, Hartford, the Boston School for Deaf Mutes, or the Clarke Institution, Northampton?
15. Is the child mentally weak?
16. Does the child now speak, — if so, how many words?
17. REMARKS.

ADDRESS AND SCHOOL FESTIVAL.

ADDRESS OF HON. WILLIAM GASTON

TO THE SCHOOL COMMITTEE,

IN RESPONSE TO A VOTE OF THANKS AT THE CLOSE OF THE MUNICIPAL YEAR.

At a meeting of the School Committee, held on the thirtieth day of January, 1872, Dr. Shurtleff offered the following resolution, which he prefaced with some remarks expressive of the feelings of regret which he said naturally arose in the minds of all at parting with retiring members of the Board, with whom they had been associated and had learned to esteem, and expressive also of his personal appreciation of the valuable service of Mayor Gaston as presiding officer of the Board.

Resolved, That the thanks of this Board be presented to His Honor William Gaston, President of the School Committee, for the able and impartial manner in which he has presided at the meetings during the past year, and for the uniform courtesy and kindness which he has extended to the members of the Board at all times during his presidency.

Mr. Henry S. Washburn seconded the resolution, and in so doing paid a graceful compliment to Mayor Gaston, whose sterling qualities of character he had known and appreciated from the day of early manhood when they were students in college together.

The Secretary of the Board put the motion for the passage of the resolution, which was carried unanimously by a rising vote. Mayor Gaston responded as follows:—

GENTLEMEN, — I deeply feel the kindness of your words in this parting hour, though I confess that your uniform courtesy and generosity towards me, during the entire year, had prepared me to accept them. No one can, with any degree of success, discharge the duties of your presiding officer unless he is sustained by you. For your support and assistance, so constantly and so freely given, it is now my opportunity, as it certainly is my sincere pleasure, to return you my grateful acknowledgments. It has been one of the pleasant services of my office to preside over the deliberations of a body like this, a body distinguished for its high intelligence and for its entire devotion to its great and responsible duties. I shall carry with me into private life pleasant recollections of my associations with you, and a grateful remembrance of your kindness.

ANNUAL SCHOOL FESTIVAL.

1873.

The Annual Festival given to the graduates of the Public Schools, by the city, was held on the afternoon of Wednesday, July 2d, at Music Hall. The decorations for the occasion were in excellent taste, including floral effects with those of colored draperies in exquisite combination. The platform was almost hidden from view by a profusion of pot plants and floral devices, and in the centre an arbor, composed mainly of roses, formed a beautiful central effect. The scholars of the graduating classes, to the number of nearly thirteen hundred, were seated on the balconies, each school being in charge of its head teacher. A more beautiful sight than was presented when all were seated, can hardly be imagined. The young ladies were, almost without exception, attired in white, with bright-colored sashes, which made the scene from the floor to present the appearance of a bouquet, brightened by the smiling faces and laughing eyes of the young people. In the background the more sober suits of the boys made a strong contrast with the bright colors in front.

At four o'clock the children and parents, who occupied the floor, were called to order by Mr. F. H.

Underwood, chairman of the Festival Committee, and prayer was offered by Rev. A. J. Gordon. Mr. Underwood then addressed the children as follows: —

“In older countries, where traditions of Arcadian days still linger, and where the beauty and freshness of the world’s youth are not wholly lost, there is an annual festival of Harvest Home. It is when the last wain of wheat sheaves has been gathered by the family of sun-browned reapers, or the last load of golden fruit, or the last hampers of purple grapes from the vineyard. The pictures of such scenes are familiar. You remember the gay peasant in front, guiding the slow oxen as they sway their garlanded horns. His sister upon the cart, whose graceful figure crowns the group, is thrumming a zittern. Boys, whose ruddy faces glow beneath their ivy crowns, trip along the grassy path, their bare feet keeping time to the music. The patriarch and his white-capped dame follow; while stout-armed damsels on either hand poise on their heads baskets of fruits and flowers, with an artless and inimitable grace.

“We look on such a picture, whether in the verse of the poet, or on the canvas of the painter, with a strong feeling of sympathy; and we almost forget that in our age of steam and electricity, our age of toil and worry, our age of scheming and falseness, such a scene of content is as impossible for us as the return of the innocence of Eden. But though Yankee farmers do not dance on their way to their barns, though noisy machines and hircling labor have displaced the old bucolic classes, though our girls carry piles of

architectural hair-work rather than picturesque flower-baskets on their heads, we yet have a season of corresponding pleasure, a season of thankfulness and of honest pride, an intellectual Harvest Home, not so simple or tranquil as the one just sketched, but still beautiful, suggestive, and full of tender associations to thoughtful men. The school is the glory of New England, and the annual festival of its graduates is our dear land's Harvest Home. We do not raise wheat; our vineyards are few; the luxuriance of a Southern or a Western harvest we do not know.

“ ‘ Man is the nobler growth our realms supply,
And souls are ripened in our Northern sky.’ ”

“ This, therefore, is our festival. Here have come our faithful husbandmen and their handmaidens, and they come rejoicing. These beautiful rows of animated faces, these lines of white, flecked with colors that bewilder the vision like a brilliant figure in a kaleidoscope, and these sober-suited but eager and ingenuous boys, these are our fruits. Therefore it is that on this day they come in gay attire; that the poor man's darling has her ribbon or sash, saved perhaps from scanty earnings, and that rich and poor meet on common ground. Therefore it is that we meet with exhilarating music and under arches of flowers. Therefore it is that the fathers of the city have come to congratulate us, and that our excellent bachelor Mayor is to give his blessing and a posy to each of this multitudinous family. Masters and teachers, in behalf of the committee, I congratulate you upon the

results of your labors. Yours is among the highest of human pursuits, highest in dignity as in responsibility. You will be blessed in the consciousness of having done your duty, and blessed in the grateful memories of thousands of children.

"I congratulate you, children, upon reaching this period in your course of scholarship. You, as well as your teachers, have earned a respite from study. You can leave the hot and dusty town, and enjoy the coolness of the mountains, the woods, or the sea-shore. You come here decorated with the ribbon of an order as noble and significant as any founded by king or kaiser. Your diploma admits you, though only as neophytes, into the great order of learning; an order not established on ancient privilege, nor sprung from a courtier's jest, nor from a successful crime; an order of seekers after truth; an order whose future is without limit, whose founder is God. Do not forget your high privileges. While you do your part in the world's work, begin the formation of intellectual habits that will be your solace in age and adversity, and which alone can give the needed grace to worldly success. We are honored, to-day, by the presence of one who may be considered, in the world of thought, the flower of our New England race, an exemplar of its wisdom and wit, and of its intellectual and moral culture.

"My young friends, when you are grown old, and your grandchildren are reading those essays that have charmed your fathers, you will stop them to say that, long ago, at the school festival, in 1873, you saw and heard the illustrious author."

At the close of Mr. Underwood's remarks, he introduced, in a pleasant way, Mr. Ralph Waldo Emerson, who was greeted with such prolonged applause that his voice was lost amid the hand-clapping of the delighted children. When partial silence was obtained, Mr. Emerson referred to the joy with which he remembered that only a short distance from the place where he stood (School street) he had obtained his instruction at the reading school of Master Haskell and the writing school of Master Snelling, and subsequently he had attended the Latin school in the same street. He then congratulated the scholars upon being graduates of Boston schools, which were the best schools in the world, in his opinion, offering more advantages than those of any other country. In closing, Mr. Emerson urged upon the scholars the importance of reading proper books, and regretted that the standard literature of the day was so inferior to that of his childhood. There being an evident difficulty in hearing the speaker, he closed very abruptly.

Rev. Phillips Brooks was then introduced, and, after deprecating the idea of speech-making on such an occasion, he proceeded to speak of the peculiarities of Boston in an educational point of view, saying that Bostonians never ceased to be scholars; that they merely passed from one school to another, and never finished their education while they lived. He continued by speaking of his residence, during the war, in Philadelphia, and of the interest with which each regiment was received on the march to the front, as each one might contain the one man who was to lead the nation out of the terrible struggle. A like

interest was felt in the regiments of scholars who, year after year, came up to the front, to join in life's battles, as each year's graduates included more or less of those who in after years are to be the leading minds of the country. The speaker congratulated the graduates of the present year upon the fact that their last year in school had been such a noble one in the life of the city, when its true nobility had been so gloriously manifested in its trial by fire and suffering from the consequences of that calamity. Mr. Brooks closed by wishing all a happy vacation and life on to the end.

His Honor Mayor Pierce was then introduced, and spoke very briefly of the ample field of opportunity offered for all workers in the busy world, and of the importance of improving all the advantages offered in the way of education while they were to be had, as nothing is regretted so much in after life as the neglect of school culture. The Mayor closed by congratulating those whose school life had closed, upon the degree of perfection attained by them in their studies, and expressing the wish that those who returned to the higher schools would come back refreshed and strengthened for another year's labors by a pleasant vacation.

At the close of the Mayor's remarks, the members of the school committee formed on either side of their honored chairman, and the scholars of the various schools marched past the Mayor to the music of the Germania Band, and each received from his hand a beautiful bouquet. When all the twelve hundred or more had been presented, the doors of Bumstead Hall

were thrown open, and all present partook of an excellent collation. Subsequently, dancing was the order of the evening, and a right merry time was enjoyed by all the children, and those of the young men and maidens whose dignity was not too great to prevent them from mingling and being included among the little folks. The occasion as a whole was eminently successful, and will be remembered by the graduates of the schools, long after many more important things are forgotten in the hurry and work of after life, as a red-letter day, when all the world appeared as bright before them as the scene which surrounded them.

FRANKLIN MEDALS,
LAWRENCE PRIZES,

AND

DIPLOMAS OF GRADUATION.

FRANKLIN MEDALS.

1873.

LATIN SCHOOL.

James Loring Cheney,
John Q. A. Brett,
Walter Herbert Russell,
Edward Jones Cutter,
Matthew Vassar Pierce,
Thomas Foster Sherman,
Arthur Briggs Denny,
James Wise Walker.

ENGLISH HIGH SCHOOL.

Frank E. Peabody,
Charles Everett,
Frank C. Brewer,

J. B. Babcock, Jr.,
Fred. W. Calkins,
William S. French,
Eugene D. Pierce,
Benjamin S. Palmer,
Michael J. Sullivan,
Chas. E. Estabrook,
Clarence W. Barron,
Albert E. Warner,
Edward F. Ripley,
Granville R. Farrar,
Henry E. Webb,
Edward J. Parsons,
John B. Clapp,
Albert W. Cobb.

LAWRENCE PRIZES.

1873.

LATIN SCHOOL.

DECLAMATION. — *First Prize*. — Edward B. Hunt. — *Second Prizes*. — Howard C. Dunham, Edward J. Cutter. — *Third Prizes*. — Arthur B. Denny, Charles H. Vinton.

Exemplary Conduct and Fidelity. — Hayward W. Cushing, Henry Wheeler, Edward S. Hawes, David B. Cheney.

Exemplary Conduct and Punctuality. — J. Loring Cheney, John Q. A. Brett, Thomas F. Sherman, Willis B. Allen, Edward B. Hunt, Quincy Pierce, Phineas C. Hedley, Frank B. Patten, George W. Merrill, Matthew V. Pierce, Orren B. Sanders, Samuel Delano, John Reynolds.

Excellence in Classical Department. — *First Class*. — J. Loring Cheney. — *Second Class*. — Willis B. Allen. — *Third Class*. — Samuel E. Somerby. — *Fourth Class*. — Edward B. Hunt. — *Fifth Class*. — George G. Sears. — *Sixth Class*. — Benjamin P. Clark.

Excellence in Modern Department. — *First Class*. — Arthur B. Denny. — *Second Class*. — Willis B. Allen. — *Third Class*. — Henry Dunham. — *Fourth Class*. — Edward B. Hunt. — *Fifth Class*. — Lott Mansfield. — *Sixth Class*. — Ezra H. Baker.

PRIZES FOR SPECIAL SUBJECTS.

For a Translation into Greek. — Herbert P. Grover.

A Latin Poem. — Willis Boyd Allen.

An English Poem. — Newell R. Campbell.

A Translation from French. — John Q. A. Brett.

A Poetical Translation from Horace. — Willis Boyd Allen.

A Translation from Tacitus. — Webster Kelley.

A Translation from Pliny. — Edward S. Hawes.

A Translation from Nepos. — David B. Cheney.

Best Specimen of Penmanship. — John Q. A. Brett.

Best Specimen of Drawing. — Walter M. Cutler.

ENGLISH HIGH SCHOOL.

COMPOSITION. — *First Prize*. — Clarence W. Barron. — *Second Prize*. — John B. Clapp. — *Third Prizes*. — Charles Everett, Charles E. Richardson.

DECLAMATION. — *First Prizes*. — Clarence H. Carter, Frank C. Brewer. — *Second Prizes*. — C. L. Clifford, Frank E. Greene. — *Third Prizes*. — William S. French, Samuel S. Knapp.

LITERARY. — *First Prizes*. — Frederic A. Macdonald, Frank E. Greene, William P. Flynn, Clarence H. Carter, Caleb E. Gowen, John A. Porter, Harry T. Upham, Charles W. Blodgett, William S. Leavitt, Abraham Spitz, Albert H. Munsell, Parker N. Bailey. — *Second Prizes*. — John H. Child, Jesse Pierce, William E. Davenport, Charles H. Burr, Charles S. Loeffler, Jacob Gottlob, Louis E. Heyer, Edward W. Morse.

SCIENTIFIC. — *First Prizes*. — Frederic H. Prentiss, George W. Beeching, Albert G. Milton, Charles J. Adams, Robert F. Reddy, John H. Clarke, Harry H. Baldwin, Henry P. Tufts, Henry T. Converse, Thomas G. Farren, Horace B. Shepard, Frederic W. Hobbs, Percy E. Walbridge, Henry W. Foster. — *Second Prizes*. — George A. Smith, Michael J. McCarthy, Marshall A. L. Burroughs, Flavill W. Kyle.

SPECIAL.

GENERAL EXCELLENCE AND DEPORTMENT. — *First Class*. — Thomas W. Roulston, Frank C. Noble, Luther S. Anderson, Charles E. Stuart, Clifton Church, Frederic T. Manson, John C. Murphy. — *Second Class*. — Ernest E. Wallingford, Alfred W. Brown, Edward J. Ellis, James A. Murphy, George A. Goodwin. — *Third Class*. — Frederic R. Loring, James A. Bouvé, Henry Schlimper, Herbert W. Loveland, Frank A. Wilson, Godfrey M. Hyams, Frederic P. Taylor, Howard S. Davenport, George H. Sampson, John Parker.

DIPLOMAS OF GRADUATION.

1873.

LATIN SCHOOL.

Alexander Thomas Bowser,
Johannes Q. A. Brett,
Newell Rogers Campbell,
Jacobus Loring Cheney,
Carolus Gilman Currier,
Hayward Warren Cushing,
Frederick Waldo Cutler,
Gualterus Marshall Cutler,
Edvardus Jones Cutter,
Arthurus Briggs Denny,
Howard Cary Dunham,
Francus Edward Fulton,
Preston Herbert Grover,
Henricus Bright Hudson,
Edvardus Leland Morse,
Matthaeus Vassar Pierce,
Quincy Pierce,
Francus Waldron Rollins,
Gualterus Herbert Russell,
Thomas F. Sherman,
Jacobus Wise Walker,
Reginald Heber Young.

ENGLISH HIGH SCHOOL

Charles Jesse Adams,
Henry Niles Almy.
Luther Stetson Anderson,
John Brazer Babcock, Jr.,
Wilber Chester Babcock,
Charles Morrill Baker,
Harry Heath Baldwin,

Clarence Walker Barron,
Charles Augustus Bartlett,
William Henry Bartley,
George Washington Beeching,
William Henry Beeching,
Charles Thomas Bodwell,
William Burroughs Bradford,
Frank Crocker Brewer,
Frederic Walter Brown,
Samuel Edward Brown, Jr.,
Frederic Walter Calkins,
Clarence Howard Carter,
William Henry A. Caseo,
William Jordan Caton,
Clifton Church,
John Bouvé Clapp,
John Henry Clarke,
Albert Winslow Cobb,
Charles Gilman Copeland,
Livingstone Cushing,
Charles Fuller Drew,
Charles Isaac Duncan,
Charles Robbins Edwards,
Charles Eugene Estabrook,
Charles Everett,
Granville Robinson Farrar,
Jacob Louis Fishel,
William Patrick Flynn,
William Sidney French,
Alfred Henry Gilson,
Evelyn Bonn Goodsell,
Charles Frederick Gorman,
John Gourley, Jr.,

Caleb Emery Gowen,
 Frank Eugene Greene.
 Joseph Richard Hews,
 George Hewes Hunneman,
 George Stanley Hunting,
 Everard Irwin Langell,
 Louis Levi,
 Frederic Walker Lincoln, Jr.,
 John Bernard Lynch,
 Frederick Tower Manson,
 Melville Tilden Marshall,
 Antoine Aloysius McAloon,
 Robert John McCool,
 Frederic Alexander McDonald,
 James Francis McGill,
 Frank Charles McKenna,
 Charles Francis M'Kenney,
 Alfred Gookin Milton,
 Warren Woodbury Morey,
 Edward Joseph Moriarty,
 John Dennis Mulchinock,
 John Cunningham Murphy,
 Frank Charlton Noble,
 Benjamin Sanborn Palmer,
 Edward Jenness Parsons,
 Frank Everett Peabody,
 Eugene Davis Pierce,
 Lewis Bates Porter,
 John Allison Porter,
 Frederic Herbert Prentiss,
 Thomas Webb Preston,
 Frank Freeborn Raymond,
 Robert Franklin Reddy,
 Charles Edward Richardson,
 Edward Franklin Ripley,
 Arthur Burton Robinson,
 George Lindsay Roskell,
 Thomas William Roulston,
 Charles William Sargent,
 Daniel Joseph Shea,
 Benjamin F. B. Simonds,
 Vibe Clay Spicer,
 Charles Frank Some,
 Charles Edwin Stewart,
 Eugene Francis Sullivan,
 Michael John Sullivan,

Edward Summerfield,
 Edward Lowell Talbot,
 George Albert Taylor,
 Harry Payne Tufts,
 Arthur Roswell Underwood,
 Harry Thomas Upham,
 Albert Eri Warner,
 Henry Edgecombe Webb,
 Albert James Wheeler,
 Frederic Loring Wheeler, Jr.,
 Charles Sumner Willard,
 Charles Orsmer Willis,
 Julian Franklin Witherell,
 Horace Adelbert Wyman.

GIRLS' HIGH SCHOOL.

REGULAR AND EXTRA COURSES.

Ellen S. Babcock,
 Ellen M. Barbour,
 Ida L. Boyden,
 Anna P. Bridge,
 Fanny T. Comer,
 Mary G. Morrison,
 Parnell S. Murray,
 Lilius E. Page,
 Frances Schlegel,
 Bessie Webb.

REGULAR COURSE.

Helen M. Adams,
 Jessie S. Aldrich,
 Lena G. Anderson,
 Mary E. Anderson,
 Ella C. Atwood,
 Cora I. Ashley,
 Kate Babson,
 Charlotte A. Bartlett,
 Mary A. Beeching,
 Sarah E. Bickford,
 Anna M. Bond,
 Anna J. Bradley,
 Mary Bradley,
 Lizzie H. Brown,
 Jessie Brown,
 Margaret E. Bryant,

Rebecca A. Buckley,
Ella J. Carleton,
Maria F. A. Carr,
Adelaide D. Chandler,
Mary E. Colburn,
Abby A. Colcord,
Florette Coleman,
Mary E. Conley,
Alice M. Connor,
Josephine M. Cotter,
Ella F. Cowdin,
Alice M. Cushing,
Sabina F. Dale,
Jennie M. Davis,
Cora E. Dike,
Anne Elizabeth Drew,
Marcella E. Donegan,
Clara A. Eastman,
Clara Edwards,
Carrie M. Egerton,
Clara E. Ellis,
Amanda C. Ellison,
Katie E. Fitzgerald,
Clara B. Flagg,
Emma Alice Gove,
Katie S. Gunn,
Annie Grace Hargrave,
Elizabeth D. Haskins,
Carrie W. Hayden,
Silence Adams Hill,
Mabel F. Hines,
Minnie L. Hobart,
Lizzie Gertrude Howes,
Margaret Theresa Hurley,
Mary F. Hutchins,
Adelaide A. Jacobs,
Lucy Ella Johnson,
Margaret A. Knox,
Fannie D. Lane,
Frances E. Leahy,
Mary Genevieve Leary,
Alice L. Littlefield,
C. Lizzie Lothrop,
Julia Desirée Marliave,
Catherine K. Marlow,
Alice M. B. McCluse,

Ellen C. McDermott,
Mary Cressy McKay,
Ida A. Merriam,
Mary Emma Merritt,
Adelaide P. Meston,
Mary A. Montgomery,
Nellie M. Moore,
Rebecca Morrison,
Ellen Theresa Noonan,
Eliza W. Noyes,
Theresa S. O'Connor,
Rosa C. O'Neil,
Martha S. Oviatt,
Leila E. Perry,
Mary B. Powers,
Ella Genevra Putnam,
Emma C. Putnam,
Cevilla R. Richardson,
Margaret F. Riley,
Viola G. Røys,
Alice C. Ryan,
Minnie Sanford,
Susan A. Slaven,
Lizzie L. Smith,
Mary Bartlett Smith,
Marion F. Smith,
Maria J. Smith,
Allie Nettie Squire,
Alna Jennie Squire,
Helen Chase Steele,
Ellen Adelia Stone,
Katharine S. Summers,
Ella M. Taylor,
Ida F. Taylor,
Mary E. Tiernay,
Emmeline E. Torrey,
Mary E. Towle,
Ellen L. Wallace,
Mary E. Waller,
Isabella Westcott,
Emma J. Wheelock,
Frances A. Whitmore,
Fannie Louise Willard,
Mary B. Winchell,
Esther Maria Young.

NORMAL SCHOOL.

Lavina E. Adams,
 Mary J. Backup,
 Anna B. Badlam,
 Elizabeth G. Bailey,
 Helen M. Bell,
 Fannie Blanchard,
 Euroda F. Bickford,
 Hattie E. Boston,
 Ellen M. Brown,
 Lizzie A. Colligan,
 Matilda F. Crosby,
 Frances M. Davis,
 Ida H. Davies,
 Mary A. A. Dolan,
 Mary A. Farrington,
 Mary F. French,
 Frances W. Gill,
 Annie M. Gillespie,
 Julia A. Gowing,
 Mary Ella Guild,
 Carrie A. Haven,
 Laura K. Hayward,
 Henrietta A. Hill,
 Clara Hooker,
 S. Lila Huckins,
 Ella T. Jackson,
 Frances T. Kelly,
 Ida F. Kendall,
 Maggie J. Leary,
 Isabel F. Lee,
 Miriam Levi,
 Isabel C. Livingstone,
 Mary L. Lewis,
 Anna Macdonald,
 Alice M. May,
 Katie E. McGowan,
 Katie A. Nason,
 Hannah A. Nash,
 Lizzie Ordway,
 Honora T. O'Dowd,
 A. Lizzie Park,
 Electer M. Porter,
 Harriet I. Preble,
 Florence M. Proctor,
 Helen A. Putnam,

Lizzie A. Sanborn,
 Nellie G. Sanford,
 Clara J. Snow,
 Laura M. Stevens,
 Anna L. Story,
 Bridget E. Scanlan,
 Isabel Thatcher,
 Ella A. Turner,
 Emily W. Withey.

ROXBURY HIGH SCHOOL.

Boys.

Horace Gwynne Allen,
 Horace Bacon,
 William George Bell,
 Henry Hall Carter,
 William Lewis Clark,
 George Coffin,
 Charles Webster Franklin,
 Simon Goldsmith,
 George Francis Hammond,
 James Howe, Jr.,
 Leonard Nutter Howe,
 Henry Dana Hutchinson,
 Henry William Kelly,
 Marshall Nevers,
 Charles Parker,
 Edward Peirce,
 Charles Taylor Pierce,
 David Rice,
 John Peabody Riley,
 Willey Marshall Sanborn,
 Thomas Francis Shaughnessy,
 Frank Spangler,
 Richard Patrick Sullivan,
 Charles Howard Walker,
 Clarence Elliott Woodward,
 Nelson Potter York.

Girls.

Sarah Southac Burrell,
 Ella Eudora Clark,
 Justina Bradford Clark,
 Hattie Frances Clement,
 Mary Elizabeth Crosby,

Sarah Alephonsus Crosby,
 Millie Antoinnette Cutter,
 Sarah Louisa Day,
 Amelia Jones Dove,
 Margarita Estelle Grady,
 Lucie Ellis Griffeth,
 Susan Barley Harris,
 Florence Ada Howe,
 Delia Teresa Killion,
 Elizabeth M. Kohl,
 Hattie Augusta Littlefield,
 Annie Wallace Morse,
 Mary Ella Mulliken,
 Elizabeth Dean Mulvey,
 Annie Louise Newcomb,
 Mary Esther Perrin,
 Eva Pishon,
 Sarah Frances Prince,
 Katie Ellen Ray,
 Annie Dexter Robinson,
 Harriet Emma Seaver,
 Annie Wheelock,
 Marietta Worthen.

DORCHESTER HIGH SCHOOL.

CLASSICAL COURSE.

David Marks Babcock,
 George Henry Ferry,
 William Franklin Temple.

FOUR YEARS' COURSE.

Boys.

George Congdon Gorham,
 Stephen A. Douglas Monroe.

Girls.

Cordelia Rosanna Capen,
 Maria Wardwell Hawes,
 Mary Ella Mann,
 Caroline Frances Melville,
 Annie French Pope,
 Anna Holden Payson,
 Ellen French Swan,
 Esther Rebecca Whiton,
 Susan Broughton Allbright.

THREE YEARS' COURSE.

Boys.

Walter Boynton,
 Frank Woods Baker,
 Harold Childs,
 James Arnold Colgan,
 Thomas Pearce Edwards,
 Edgar Frank Eastman,
 Sherwood Field Gorham,
 Edwin Augustus Knights,
 Walter Shepard Lyons,
 William Gardner White,
 Arthur Elliot Sprout.

Girls.

Fannie Bates Brown,
 Harriet Coffin,
 Mary Ann Caldoff,
 Ella Louise Greeley,
 Elizabeth Benson Mann,
 Mary Susan Mann,
 May Estella Pratt,
 Edith Lee Preston,
 Mary Isabel Roper,
 Emma Frances Russell,
 Minnie Elizabeth Sanborn,
 May Jane Sheridan,
 Anna Lora Weiss,
 Emma Geneva,
 Susan Ellen Williams.

ADAMS SCHOOL.

Boys.

George Autcliffe,
 Charles G. Bencker,
 John H. Bohling,
 William M. Butler,
 Clarence H. Crocker,
 Edwin M. Hahn,
 Robert W. McBride,
 Henry H. McDonough,
 William E. Nagle,
 Harry Ripley,
 William F. Seibert,

Thomas F. Sheridan,
Arthur H. Thompson,
Joseph W. Zwinge.

Girls.

Emma J. Baker,
Charlotte J. Blood,
Elda E. Gray,
Rosa E. Simmons,
Helen F. Thompson,
Caroline M. Wiegand.

BIGELOW SCHOOL.

William H. H. Barker,
Alfred L. Berry,
Horace M. Bickford,
George A. Capen,
Frank X. Connor,
Thomas W. Cuniff,
Warren H. Doolittle,
James H. Elwell,
George R. Foster,
Warren C. Hallett,
Rufus J. Henchy,
Otis L. Hodge,
Charles H. Johnson,
John Knowles,
Edward Lanning,
Thomas W. Linton,
William H. Parker,
James E. Phelan,
Hubert Pope,
William E. Rand,
George F. Reed,
Frank N. Reed,
Henry C. Robbins,
William Ronald,
William F. Rumrill,
James Shea,
Charles S. Soule,
Oscar W. Starkweather,
Frederic J. Stewart,
Frederic W. Stuart,
Martin F. Sugrue,
Waldo A. Wallingford,

Edgar L. Warren,
Frank E. Willis.

BOWDITCH SCHOOL.

Mary E. Buckley,
Mary F. Cahill,
Mary B. Cronan,
Mary A. Crowley,
Elizabeth F. Cunningham,
Margaret A. Curran,
Mary A. Curran,
Catherine E. Donovan,
Julia A. Duggan,
Annie J. Fenelon,
Hannah L. Flynn,
Mary F. Ford,
Mary A. Harrington,
Catherine F. Healey,
Mary A. Hurley,
Catharine A. Hurley,
Anna A. Magee,
Mary E. Mahoney,
Mary A. McCarthy,
Julia A. McCarthy,
Catherine A. McClure,
Margaret A. Meehan,
Catharine B. Moriarty,
Theresa A. Murphy,
Margaret A. Murphy,
Ellen F. Newell,
Abby A. O'Brien,
Mary J. O'Neil,
Honora A. Toumy,
Catherine F. White.

BOWDOIN SCHOOL.

Octavia J. Bailey,
Annie M. Boston,
Florence E. Browning,
Eliza W. Campbell,
Grace F. Coolidge,
Helen B. Dodd,
Melissa J. Gardiner,
Isabel P. George,
Minnie P. Goodwin,

Serena R. Haskins,
 Alice P. Howard,
 Emma G. Howard,
 Lilian F. Hildreth,
 Minnie S. Hurl,
 Jessie F. Jennings,
 Mary C. Kellogg,
 Mary E. McCabe,
 Alice T. Miller,
 Marion Newell,
 Emma Robertson,
 Mary L. Ryan,
 Louise C. Sherman,
 Emma F. Simmons,
 Addie L. Simonds,
 Annie L. Smith,
 Maria A. Thomas,
 Alice M. Turner,
 Nellie M. Warren,
 Annie F. Wing.

BOYLSTON SCHOOL.

Boys.

Patrick A. Anderson,
 William G. Dunn,
 Dennis C. Fahren,
 Peter F. Gartland,
 Michael E. Graham,
 John F. Johnson,
 Richard F. Johnson,
 John E. Shea,
 John W. Sullivan,
 Michael D. Sullivan.

Girls.

Ellen A. Anderson,
 Adaline P. Fisher,
 Sarah E. Gainey,
 Mary A. Grindley,
 Henrietta Manheimer,
 Annie F. O'Gorman,
 Lizzie A. Palmer,
 Louisa J. Scanlan,
 Julia F. Murphy,
 Lizzie G. Travis.

BRIMMER SCHOOL.

Joshua Beckman,
 Benjamin H. Bradlee,
 Charles H. Brown,
 Frank H. Clapp,
 William J. Clark,
 Thomas Clifford,
 David A. Collins,
 William H. Deasy,
 Samuel B. Doggett,
 George C. Dunning,
 George G. Endicott,
 Charles H. Falards,
 Charles R. Fields,
 John J. Flynn,
 Asa P. French,
 Louis H. Galencia,
 Frederic Getchell,
 Edward H. Green,
 Samson Greenwood,
 Daniel J. Haley,
 Frank A. Hall,
 Richard S. Hall,
 Harry S. Hall,
 Otis S. Harding,
 Charles A. Harper,
 Meyer Kaufman,
 Rufus A. Kingman,
 Louis Louis,
 Henry W. Marcy.
 John J. McCormick,
 Jeremiah J. Murphy,
 Edward P. Murtagh,
 Daniel O'Callaghan,
 George A. Parsons,
 John W. Phelps,
 George E. Pratt,
 Charles E. Rich,
 William T. Simmons,
 Frank L. Smith,
 Jacob M. Spitz,
 Joshua Studley,
 John B. Studley,
 Jacob Warshauer,
 Charles P. Whitters.

CHAPMAN SCHOOL.

Boys.

Richard Burke,
 Reuben A. Burnham,
 Frank L. Davis,
 William E. Fish,
 Frank W. Foss,
 Samuel R. Hall,
 J. H. McKinnon,
 Willie W. Prior,
 James E. Ryder,
 Erasmus F. Smith,
 H. L. Stalker,
 Clarence E. Young.

Girls.

Katie M. Anderson,
 Nellie W. Cutting,
 Emma L. Damon,
 Lizzie M. Dyer,
 Nellie M. Dunnells,
 Hattie B. Fernald,
 Nellie F. James,
 Lillie S. Maxwell,
 Nellie M. Naughton,
 Lizzie C. Osborn,
 Bessie Palmer,
 Phronie Phinney,
 Almira E. Reid,
 Grace E. Shaw,
 Fannie Sturtevant,
 Florence E. Sturtevant,
 Ida M. Smith,
 Ada R. Varney,
 Estella Young.

COMINS SCHOOL.

Boys.

Reviere E. Atwood,
 Henry J. Brawley,
 Charles H. Campbell,
 George W. Carnes,
 George W. Cleary,
 Edmund H. Cook,

Joseph P. Cunningham,
 Walter F. Decatur,
 William H. Diehl,
 George D. Fernald,
 Frank H. Folsom,
 Frank C. Gemeiner,
 Horace E. Gillmore,
 John J. Kelly,
 John L. Kelly,
 James F. Kilday,
 John F. Kinney,
 Edward J. McCormick,
 Timothy M. Raftery,
 Joseph H. Riley,
 Edward E. Roach,
 Thomas A. Scollen,
 Edmund M. Stanton,
 John A. Stanton,
 John E. Steere,
 John B. Walker, Jr.,
 Henry Y. Wiggin,
 Charles R. Wright.

Girls.

Lydia E. Connery,
 Emma A. Cudworth,
 Susie A. Duffey,
 Louisa M. Floden,
 Emily Frank,
 Matilda A. Fricker,
 Rosa E. Juengling,
 Clara F. Lothian,
 Maggie A. McCart,
 Mary A. McDonald,
 Rosanna McKeon,
 Laura E. Merritt,
 Susannah Newsome,
 Mary A. Norton,
 Fannie E. Ward,
 Lena Weiler,
 Sarah S. Zahn.

DEARBORN SCHOOL.

Boys.

Frank Matthew Decatur,
 John Francis Dowd,

John Philip Endress,
 Peter Edward Kelley,
 Charles Edgar Lord,
 Henry Whitney Marsh,
 John Francis Quirk,
 Joseph Henry Sheehan,
 Thomas Stearns,
 Henry Clarence Tauck,
 Fred. Augustus Thompson.

Girls.

Laura Etta Adams,
 Mary Ellen Brady,
 Kate Cunningham,
 Lucy Maria Daniels,
 Ella Marion Fairbanks,
 Ella Francine George,
 Alice Gardner Knight,
 Alvena Charlotte Laming,
 Mary Louisa Nason,
 Eva Maria Nay,
 Mary Alice Neil,
 Henrietta Adeline Osgood,
 Carrie Evelyn Paine,
 Gertrude Medora Tonkin,
 Lydia Gillespie Wentworth.

DUDLEY SCHOOL.

Lottie B. Alden,
 Emma F. Bowen,
 M. Isabelle Chamberlin,
 Mary M. Devereux,
 Sabina Egan,
 Lizzie E. Ellis,
 Annie D. Goddard,
 Mary Hubbard,
 Carrie J. Littlefield,
 Lizzie D. Lunt,
 Ida C. Marble,
 Louisa E. McGlew,
 Mary A. Murphy,
 Ellen E. Powers,
 Mary A. Scanlan,
 Alice G. Strekman,
 Angela M. Streeter,
 Martha J. Thaxter,

Lillian F. Thompson,
 Emily F. Wells,
 Lizzie J. Woodward,
 Annie I. Worthen.

DWIGHT SCHOOL

Arthur A. Adams,
 John Albree,
 Louis E. Bunnell,
 William Cumston,
 William E. L. Cunningham,
 Charles J. Davis,
 Isaiah N. Day,
 Daniel J. Donovan,
 Carroll S. Faunce,
 George C. Garland,
 Alfred A. Glasier,
 George G. Hayes,
 John W. Hendrick,
 Charles A. Howland,
 Arthur W. Hoyt,
 Nathaniel W. T. Knott,
 George A. Macomber,
 William T. Miller,
 Edward J. Newhall,
 John J. Noonan,
 John S. Ogilvie,
 George W. Parker,
 David C. Pendleton,
 Arthur H. Pray,
 Charles W. Roberts,
 Henry H. Sherman,
 Edward P. Spence,
 Orin W. Springer,
 William W. Stewart,
 Winthrop H. Wade,
 George W. Wardrop,
 Edward R. Wise.

ELIOT SCHOOL.

Samuel J. Burns,
 William J. Burnett,
 George W. Carter,
 William H. Cunningham,
 Charles S. Des Mazes,

John T. Douglas,
 James R. Fitzpatrick,
 John F. Flynn,
 Edward J. Flynn,
 Patrick J. Galvin,
 Jeremiah J. Herlihy,
 George H. Jeffrey,
 John H. Krey,
 Charles E. Miley,
 Edward J. J. McHugh,
 John McLoughlin,
 Thomas McSweeney,
 Terrence McSweeney,
 Henry Noll,
 Jeremiah E. O'Brien,
 Frank J. Reddican,
 George F. J. F. Ross,
 Thomas H. Sliney,
 Charles F. Stodder,
 Richard J. Watts,
 Albert S. West,
 Andrew B. Williams,
 James F. Wren.

EVERETT SCHOOL.

Lizzie C. Adlam,
 Rachel E. Baker,
 Nellie M. Bennet,
 Nellie M. Blanchard,
 Dollie A. Blodgett,
 Isabella Bonnar,
 Ella F. Chase,
 Isabel L. Clark,
 May Cobb,
 Susie M. H. Colburn,
 Sadie J. Fearing,
 Harriet E. Fowles,
 Georgiana Gerrish,
 Jernie M. Glidden,
 Lizzie Graves,
 Lydia A. Hutchings,
 M. Alice Jameson,
 Grace M. Jones,
 Annie Lawrie,
 Margaret D. Lawrie,
 Alice B. Magee,

Alice B. Merriam,
 Katie M. Moore,
 Julia E. Mosher,
 Mattie H. Munro,
 Nellie A. Nichols,
 Nellie O'Neil,
 Blanche Payne,
 Minnie Pelton,
 Belle B. Poor,
 Pauline Prince,
 Gertrude E. Riedell,
 Mamie G. Robinson,
 Anna L. Sanborn,
 Ida F. Thomson,
 Jennie A. White,
 Fredelena A. Wiggins,
 Carrie E. Willard.

EVERETT SCHOOL, DORCHES-
TER.*Boys.*

John H. Buchanan,
 Charles E. Chipman,
 John Connor,
 Edward McCormick,
 Ebenezer K. Pratt,
 Lovell Upshur.

Girls.

Alice M. Hutchins,
 Mabel Odiorne,
 Edith F. Scudder,
 Lettie R. Snow,
 Grace Urann,
 Nellie S. Wheelock.

FRANKLIN SCHOOL.

Emma Bendix,
 Carrie W. Burns,
 Emma S. Cobleigh,
 Alice M. Dickey,
 May G. French,
 Minnie A. Frye,
 Maud M. Glover,
 Carrie G. Greeley,
 Kate R. Hale,

Emma F. Horton,
 Flora A. Hatch,
 Emma E. Keeler,
 Nellie A. Keliher,
 Bessie L. King,
 Mary Gertrude Knapp,
 Georgiana Libbey,
 Lizzie B. Livermore,
 Katie M. Mason,
 Rosa Perle,
 Anna R. Phelps,
 Cora F. Plummer,
 Lettie M. Oldham,
 H. Cora Richardson,
 Jeannette S. Ridgway,
 Carrie E. Sanborn,
 Lizzie B. Sellingham,
 Lillie F. Smith,
 Helen L. Stevens,
 Ella C. Wedger,
 Lizzie L. Whiton,
 Lizzie A. Williams,
 Alice C. Williams,
 Annie W. Williams,
 Nellie M. White.

GIBSON SCHOOL.

Charles Fottler,
 Grace Wheeler.

HANCOCK SCHOOL.

Emily J. Agnew,
 Mary L. Brennan,
 Ellen L. Brogan,
 Mary E. Cass,
 Bridget A. Crotty,
 Abbie D. Dill,
 Catharine E. Dorgan,
 Sarah B. Fisk,
 Katie E. Gillespie,
 Sarah E. Godet,
 Alida A. Jones,
 Mary A. W. Kidney,
 Elizabeth A. Lynch,
 Katie A. McCarty,

Priscilla C. Mitts,
 Sarah J. Sullivan,
 Elizabeth F. Twigg.

HARRIS SCHOOL.

Boys.

Lewis W. Armstrong,
 Daniel Coleman,
 Edward F. Jenkins,
 Frank Ordway,
 Stephen P. Perrin,
 Frank W. Tilden.

Girls.

Emma L. Adams,
 Fannie E. B. Benedict,
 Alice S. Blackwell,
 M. Ilione Gould,
 Elizabeth C. Hill,
 Florence W. Homes,
 Harriet Mann,
 Louise S. Mann,
 Annie M. Phipps,
 M. Agnes Reid,
 Mary Emma Ryder,
 Ruth A. Swan.

LAWRENCE SCHOOL.

John F. Barry,
 William H. Bird,
 Henry F. Brackett,
 Peter Brown,
 Frederic C. Byrnes,
 Patrick J. Cahill,
 John J. A. Coffee,
 Dennis J. Collins,
 James Conley,
 Charles F. Cooney,
 John Cummings,
 Thomas M. Devine,
 John A. Devlin,
 Walter J. Donovan,
 Edward F. Duran,
 Benjamin Franklin Fenton,

Charles F. Glennen,
 Daniel E. Haley,
 John H. Hallett,
 Robert W. Hendrie,
 Thomas J. Hennessey,
 Moses H. Hodgkins,
 Daniel E. J. Horgan,
 Simon Joyce,
 John J. Kennelly,
 John W. Keyes,
 Robert J. Kernachan,
 Charles S. Miller,
 Michael J. Murray,
 John O'Brien,
 William F. J. Patten,
 Henry F. Peeling,
 Andrew G. Phillips,
 Robert S. Povah,
 John Roulston,
 George R. Rowell,
 Peter J. Schofield,
 Lawrence A. Shortell,
 Jeremiah J. Sullivan,
 Charles E. Thomas,
 George G. Topham,
 William H. Topham,
 James M. Tyrrell,
 James F. White.

LEWIS SCHOOL.

Boys.

Walter Clifford Blodgett,
 Frederic Seymour Coffin,
 Frank Herbert Cunningham,
 William Howard Edmands,
 George Herbert Flint,
 Julius Herman Grundel,
 Robert Chesley Johnson,
 George Frederic Johnson,
 William Franklin Larrabee,
 William Livermore Nason,
 Thomas Carlton O'Brien,
 Charles Mortemore Shute,
 Rufus Tolman Tobey,
 Harvey Willis Yeaton.

Girls.

Annie Eliza Aldrich,
 Carrie Adeline Alexander,
 Lillie Austin,
 Delle Eloise Burbank,
 Gertrude Amelia Burrell,
 Alice Came,
 Lucy G. Morse Card,
 Lydia Adelle Howes,
 Ella Winchester Howard,
 Mary Robinson James,
 Alice Gertrude Lane,
 Hannah Caroline Leavitt,
 Mabel Warren Locke,
 Evalina Atkins Macrae,
 Emma Rebecca Maynard,
 Fannie Hazeltine Morrison,
 Elizabeth Theobald Nason,
 Mary O'Neil,
 Mabel Cora Restarrick,
 Elizabeth Davis Rockwood,
 Mary Agnes Sheehan,
 Carrie Alice Shute,
 Emily Josephine Stetson,
 Cordelia Grace Torrey,
 Mary Louisa Tucker,
 Alice Kent Varney,
 Nellie Augusta Woodbridge.

LINCOLN SCHOOL.

Boys.

Waldo B. Bowker,
 H. Nelson Crane,
 Joseph W. Doolittle,
 Charles E. Eastman,
 Frederic W. Emerson,
 J. Dudley Hall,
 George F. Howe,
 Arthur H. James,
 Bernard F. Kaine,
 John T. Kenneck,
 Henry W. Langley,
 Charles F. Lovejoy,
 Herbert F. McCoy,
 George W. Morton,

Jose H. Neal,
 Arthur S. Pinkham,
 George W. Ross.
 Leslie M. Swett,
 George W. Thain,
 Michael D. Welch,
 Fred. O. Whitman.

Girls.

Cora A. Blackwell,
 Sally S. Blake,
 Mary C. Blom,
 Mary Cleary,
 Eliza A. Courtney,
 Mary I. Cleveland,
 Caroline C. Drew,
 Sarah J. Dudley,
 Ella M. Fuchs,
 Elizabeth B. Hedge,
 Jeannie M. Johnson,
 Delia L. Kain,
 Ida J. Keeler,
 Mary E. Kirwin,
 S. Lizzie Lamphier,
 Mary T. Morris,
 Jennie M. Mower,
 Annie L. Nickerson,
 Georgie M. Safford,
 Annie F. Sharp,
 Cornelia M. Sullivan,
 Alice J. Thayer,
 Sarah E. Welch,
 Frances E. Wheeler,
 Alice F. White,
 Jennie W. Whiton,
 Josephine E. Wormell.

LYMAN SCHOOL.

Boys.

Henry J. Brennan,
 Albert D. Coombs,
 John A. Daly,
 James W. Davidson,
 Charles L. Dakin,
 John T. Devine,

William A. Delaney,
 Charles A. Fraser,
 Joseph H. Hill,
 Herbert L. Jenkins,
 John T. Keefe,
 John Nason,
 Thomas D. O'Brien,
 Thomas E. O'Brien,
 Richard Sargent,
 Ludie J. Seavey,
 John Shea,
 John B. Sullivan.

Girls.

Jesse M. Luce,
 Susie E. H. Monroe,
 Florence A. Parnell,
 Josephine F. Russell,
 Lizzie M. Seavey.

MATHER SCHOOL.

Boys.

Charles H. Bailey, Jr.,
 William B. Ellis,
 Harry H. Gay,
 Edward W. Pearson,
 John Redington.

Girls.

Ellie A. Austin,
 Annie J. Brannan,
 Alice W. Dean,
 Alice K. Emery,
 Lucy A. Hobbs,
 Mary A. Haggerty,
 Ellen A. Holleran,
 Addie P. Lynch,
 Lizzie A. Lynch,
 Margaret O'Connor,
 Eunice E. Robinson,
 Kate W. Tucker.

MAYHEW SCHOOL.

Patrick C. Barr,
 Alliston G. Cheney,

Joseph P. Hamlin,
 Thomas F. Kelly,
 Jacob Levi,
 Cornelius Linnenan,
 John D. May,
 Evarts B. Mayhew,
 William H. Ranson,
 William L. Underwood.

NORCROSS SCHOOL.

Mary J. F. Agnew,
 Agnes M. Allen,
 Mary A. F. Brady,
 Ida May Brooks,
 Nellie A. Brown,
 Elnora Buckley,
 Minnie F. Callaghan,
 Maggie M. Callaghan,
 Annie J. Campbell,
 Emma A. Cochran,
 Harriet F. Cole,
 Nora V. Collins,
 Mary A. Condon,
 Mary J. Crowley,
 Lydia Alice English,
 Emma S. Farnham,
 Mary E. Fay,
 Sarah M. Flaherty,
 Mary E. Foley,
 Nettie S. Gorham,
 Ida E. Hawes,
 Honora A. Healy,
 Grace D. Johnson,
 Sara F. E. Kennedy,
 Martha G. Keyes,
 Julia A. Keyser,
 Ella J. Lappen,
 Katie Lappen,
 Fannie J. A. Lee,
 Katie Linton,
 Lizzie McDonald,
 Mary E. G. McNamara,
 Maggie A. McNamara,
 Margaret A. McNulty,
 Alice G. McNulty,
 Margaret Morrison,

Jessie S. Munro,
 Margaret Carmel Murray,
 Mary G. O'Neil.
 Mary E. Patterson,
 Mary F. Reading,
 Helena F. Scanlan,
 Katie G. Sullivan,
 Harriet Walsh,
 Margaret G. Walsh,
 Elizabeth J. Warren,
 Edith S. Wigley,
 Jennie C. Williams.

PHILLIPS SCHOOL.

Erastus F. Badger,
 Walter I. Badger,
 Frank J. Chaplin,
 James E. Fogarty,
 George L. Gifford,
 Charles A. Grimmons,
 J. Walter Heustis,
 J. Harvey Merrill,
 Charles W. Millett,
 J. P. O'Donohue,
 Charles A. Sampson,
 Thomas C. Thacher,
 Walter S. Ufford,
 Charles B. Wetherell.

PRESCOTT SCHOOL.

Boys.

Benjamin F. Bates,
 James A. Bond,
 Frank J. Briggs,
 Leonard C. Dinsmore,
 Wesley F. Dinsmore,
 Frank L. Damon,
 George H. Earl,
 George A. Garratt,
 William A. Garratt,
 David M. Kenney,
 Williard C. Lombard,
 Calvin S. Mixter,
 John F. Nugent,
 Oscar Richardson,

William H. Roome,
Patrick Sheean,
Frederick R. Sweeney,
James P. Sweeney.

Girls.

Elmira Adams,
Caroline A. Andrews,
Jennie M. Blackington,
Ida J. Breckenridge,
Clara E. Chapman,
Mary A. Damon,
Mary E. Harrington,
Ella F. Halliday,
Martha W. Kendall,
Julia G. Kilpatrick,
Ellen M. King,
Mary L. Mayo,
Frances A. McArthur,
Sarah E. McIntyre,
Harriett A. McLean,
Susan M. McLoud,
Ellen W. Mitchell,
Mary A. Palmer,
Nellie F. Pingree,
Laura S. Plummer,
Harriett E. Ryder,
Margaret A. J. Sheehen.

QUINCY SCHOOL.

Frank Ezra Abbott,
David Aloysius Barry,
John Joseph Cahalan,
John Joseph Callahan,
Richard Thomas Callahan,
Patrick Henry Conway,
John W. J. Crowley,
Cornelius Francis Donovan,
Timothy Joseph Donovan,
Thomas Dennis Gleason,
John Thomas Hitchcock,
Joseph Christopher Jones,
Michael John Kelliher,
Francis Henry Lenard,
John Joseph Linehan,
John Henry Manning,
David Joseph Maher,

Alfred Humphrey Murphy,
John Joseph Murphy,
John Henry Newell,
Charles Frederick Peck,
William Francis Powers,
John Thomas Quinn,
John Francis Ryan.

RICE SCHOOL.

Frank N. Allen,
Frederick F. Baldwin,
William R. Barton,
Howard K. Blair,
George W. Chester,
John H. Coffey,
Peter Collamore,
Michael J. Crowley,
Henry W. Cunningham,
Matthew Fallen,
Frank H. Fallon,
Herbert Fitzgerald,
Frank D. Griffin,
Charles C. Guiteau,
Eugene A. Hackett,
Charles W. Hardy, Jr.,
George W. Haslett, Jr.,
Frank B. Hemenway,
Joseph M. Hobbs,
J. Edwin Jones,
Nathaniel E. Lewis,
Lawrence Mayo,
Fred. F. Murphy,
Clarence E. Peirce,
George G. S. Perkins,
Franklin Snow, Jr.,
Fayette Sturtevant,
James P. Thayer,
Henry L. Whiton,
William H. White,
Robert C. Wiggin.

SHERWIN SCHOOL.

Boys.

George Behr,
Joseph Warren Boss,

Henry James Burrows,
 Louis Joseph Coron,
 Frederick Leslie Crocker,
 George Washington Finrow,
 James Greenlaw,
 John Hubert Kelly,
 Stephen Francis Lambert,
 William John Miller,
 John William Mitchell,
 John Henry Murphy,
 Daniel Webster Robinson,
 Charles Lincoln Stone,
 William Albert Ward.

Girls.

Florence Hamilton Cogswell,
 Mary Anne Alexis Conroy,
 Celia James Drew,
 Addie Ella Follansbee,
 Aline Emily Gardner,
 Julia Heintz,
 Lizzie Johnstone,
 Nellie Celia Keefe,
 Katie May,
 Nellie Frances Meade,
 Phebe Anne Moore,
 Grace Cushing Pierce,
 Abbie Jennie Roberts,
 Abby Sheehan,
 Nellie Ironette Wentworth,
 Mary Emma White,
 Sarah Wolfson.

SHURTLEFF SCHOOL.

Margaret J. Adamson,
 Jane M. Allen,
 Emily H. Barnhard,
 Amy G. Bicknell,
 Hannah E. Bridge,
 Margaret E. Clahan,
 Edith L. Cleary,
 Nellie Copeland,
 Nancy S. French,
 Mary L. Fitzgerald,
 Annie C. Gore,
 Belle Gustin,

Carrie T. Hale,
 Alice L. Harris,
 Ella F. Haskell,
 Ada H. Hersey,
 Emily F. Hodsdon,
 Ada F. Johnson,
 Florence N. Johnston,
 Abbie A. Kelley,
 Maria C. Lincoln,
 Florence M. Lothrop,
 Agnes G. McDonald,
 Mary E. Morse,
 Margaret McSweeney,
 Ella A. Orr,
 Flora A. Parker,
 Mary E. Parker,
 Alice J. Pierce,
 Lucinda A. Ring,
 Eunice A. Robbins,
 Cora A. Small,
 Ellen F. Sprague,
 Helen M. Streeter,
 Emma L. Wallingford,
 S. Minnie Warner,
 Alice E. Whitney,
 Fannie D. Wadleigh.

STOUGHTON SCHOOL.

Boys.

Charles Henry Humphrey,
 Harry Sullivan Kendall,
 Warren Herbert Littlefield,
 Walter Preston, Jr.

Girls.

Ida Helen Adams,
 Helen Frances Burgess,
 Mabel Ann Durell,
 Edith Warren Everett,
 Eurilla Elizabeth Gurney,
 Mary Matilda Krim,
 Ida Amelia Porter,
 Mary Elizabeth Pierce,
 Annie Sullivan,
 Georgiana Twombly,
 Mary E. Bispham Willis.

TILESTON SCHOOL.

Boys.

Waldo C. Burt,
 Arthur Camfill,
 Edward Collins,
 Charles E. Houghton,
 Arthur G. Tileston,
 Benjamin P. Williams.

Girls.

Rose A. Glennon,
 Charlotte A. Houghton,
 Agnes H. McKendry,
 Florence Withington.

WASHINGTON SCHOOL.

John Daniel Berran,
 Charles Smith Brock,
 Lewis Henry Cole,
 Michael Joseph Cooney,
 Edouard Louis Foucar,
 George Warren Fuller,
 Samuel Tappan Harmon,
 George Henry Mulliken,
 George Nelson Putnam,
 Frank Herbert Simpson,
 Frank Mannert Weis.

WELLS SCHOOL.

Etta A. Atkins,
 Sarah E. Cross,
 Mary J. Connor,
 Florence S. Daniels,
 Sarah G. Fogarty,
 Clara L. Hunting,
 Ella C. Jenkins,
 Emma E. Kendall,
 Addie P. Kingman,
 Georgie A. Libby,
 Rose A. McGonagle,
 Mary F. Meehan,
 Katie F. Murphy,
 Fannie I. Norcross,
 Nellie A. Pierce,
 Susan V. Putnam,

M. Lizzie Richardson,
 Lizzie F. Riley,
 Ella M. Rutledge,
 Lucy W. Smith,
 Jennie A. Simpson,
 Abbie E. Tower,
 Carrie F. Vinal,
 Annie Wells,
 Grace E. Wogan.

WINTHROP SCHOOL.

Mary E. Abercrombie,
 Carrie Cushing Ames,
 Mabel F. Ashley,
 Eleanor N. Baxter,
 Annie E. Carver,
 Isabella Collins,
 Mary E. Dorsche,
 Cora C. Downs,
 Kate E. Doyle,
 Eva Dudley,
 Clara C. Dunn,
 Mary Farrington,
 Emma A. Fenno,
 Ida W. Gould,
 Maria J. Harney,
 Mary N. Jay,
 Fannie L. Knight,
 Henrietta Levi,
 Susan H. Manning,
 Gabriella G. Marsh,
 Ella N. Mason,
 Annie Isabelle Merriss,
 Lizzie A. Moody,
 Jessie A. Murphy,
 Lizzie P. Mushaway,
 Henrietta Nichols,
 Mary E. Phelps,
 Mary E. Randall,
 Emma F. Reed,
 Mary M. Shea,
 Theresa Strauss,
 Ada Electa Studley,
 Carrie Isabel Vannevar,
 Lauretta H. Wheelock,
 Mary A. Whiting.

ROSTER

OF THE
BOSTON SCHOOL REGIMENT.

Colonel. — Eben C. Stanwood (English High School).

Lieutenant Colonel. — John O'Dowd (Latin School).

FIRST BATTALION. — ENGLISH HIGH SCHOOL.

Major. — O. M. Chandler.

Adjutant. — C. D. Wainwright.

Quartermaster. — H. A. Whitney.

Sergeant Major. — C. W. Blodgett.

COMPANY A.

Captain. — J. P. Skillings.

First Lieutenant. — C. F. Towle.

Second Lieutenant. — A. S. Nickerson.

COMPANY B.

Captain. — G. A. Pierce.

First Lieutenant. — C. N. Whitten.

Second Lieutenant. — J. I. Porter.

COMPANY C.

Captain. — C. R. Kingsbury.

First Lieutenant. — J. S. Wiley.

Second Lieutenant. — J. N. Emmons.

COMPANY D.

Captain. — W. D. Palmer.

First Lieutenant. — F. A. Heyer.

Second Lieutenant. — F. W. Ripley.

COMPANY E.

Captain. — G. W. Boynton.

First Lieutenant. — A. H. Munsell.

Second Lieutenant. — L. A. Murphy.

SECOND BATTALION. — ENGLISH HIGH SCHOOL.

Major. — George B. Conant.

Adjutant. — James P. Frost.

Quartermaster. — Robert S. Hawthorn.

Sergeant Major. — Clarence R. Fillebrown.

COMPANY A.

Captain. — Edward M. Farnsworth, Jr.

First Lieutenant. — Eugene F. Hartshorn.

Second Lieutenant. — William S. Phelps, Jr.

COMPANY B.

Captain. — John Fabyan.

First Lieutenant. — Thomas J. McCarthy.

Second Lieutenant. — Frank L. Miller.

COMPANY C.

Captain. — Benjamin Pope, Jr.

First Lieutenant. — Chester Guild, Jr.

Second Lieutenant. — Philip Morrison.

COMPANY D.

Captain. — Everett T. Bennett.

First Lieutenant. — Walter B. Hill.

Second Lieutenant. — Nelson T. Cowin.

COMPANY E.

Captain. — John Bellamy.

First Lieutenant. — Henry A. Guingburg.

Second Lieutenant. — Edward H. Crosby.

THIRD BATTALION. — LATIN SCHOOL.

Major. — Edward Stackpole.

Adjutant. — Thornton S. Simmons.

Quartermaster. — Thomas Russell.

Sergeant Major. — Theodore R. Murray.

Drum Major. — Joseph Meinrath.

COMPANY A. — ROXBURY HIGH SCHOOL.

Captain. — Willis B. Allen.

First Lieutenant. — Willis B. McMichael.

Second Lieutenant. — Oren B. Saunders.

COMPANY B.

Captain — Isaac B. Mills.
First Lieutenant. — Edward E. Brady.
Second Lieutenant. — George W. Ross.

COMPANY C.

Captain. — Herbert Jaques.
First Lieutenant. — Frederick L. Gay.
Second Lieutenant. — Henry Wheeler.

COMPANY D.

Captain. — Richard W. Lodge.
First Lieutenant. — Charles E. Miller.
Second Lieutenant. — Herbert Tappan.

FOURTH BATTALION.

Major. — E. C. Hodges.
Adjutant. — Nathaniel N. Thayer.
Quartermaster. — L. L. Brown.
Sergeant Major. — G. E. Munroe.

COMPANY A.

Captain. — H. F. Adams.
First Lieutenant. — Wm. Gray.
Second Lieutenant. — Wm. Hunneman.

COMPANY B. — DORCHESTER HIGH SCHOOL.

Captain. — H. C. Childs.
First Lieutenant. — J. M. Robinson.
Second Lieutenant. — W. B. Perrin.

COMPANY C. — ROXBURY HIGH SCHOOL.

Captain. — H. D. Klous.
First Lieutenant. — F. E. Ryerson.
Second Lieutenant. — G. S. Stockwell.

COMPANY D. — ROXBURY LATIN SCHOOL.

Captain. — H. D. Page.
First Lieutenant. — J. A. Harding.
Second Lieutenant. — F. Brewster.

COMPANY E. — ROXBURY LATIN SCHOOL.

Captain. — A. Stone.
First Lieutenant. — W. H. Potter.
Second Lieutenant. — H. B. Osgood.

DESCRIPTION AND DEDICATION

OF THE

GASTON GRAMMAR SCHOOL HOUSE.

GASTON GRAMMAR SCHOOL-HOUSE.

The new Grammar-School building, named in honor of ex-Mayor William Gaston, is located on a lot of land bounded by Fifth, L, and Sixth streets, City Point, South Boston. Size of lot is 250 feet by 141 feet. The style of architecture is an adaptation of Gothic, and is irregular in its outline of plan; the length being 132 feet on L street by 90 feet on Fifth. The building sets back from Fifth street 24 feet, and from L street 22 feet, the space laid down to grass. The play-ground is located in rear of building, on the south side, in size 141 by 95 feet. The material of the four façades is of pressed brick, trimmed with Connecticut brown stone.

The basement story, appropriated as play-ground, is elevated high above the lot, admitting plenty of light and air, and making the exit on the level with the yard at the Sixth street front. There are two finished stories above the basement, subdivided into six school-rooms each, with wardrobe closets, master's room, and dressing room. The whole is crowned with a high Mansard roof, with towers at each end for ventilation. The dormer windows and all finish about the roof is of iron. The roof-story accommodates an exhibition-hall, 80 by 76 by 20 feet in the clear, and

two school-rooms for advanced classes; size of all the school-rooms is 29 by 31 feet by 13.6' high. The corridor is 14 feet 6 inches in width. Hall at each end 26 feet square.

The main features of the plan are its spacious entrance and staircase room, commodious and well-lighted corridors, the amount of ventilation provided, and the method. The building has double windows throughout, and is finished in pine, grained to imitate ash, with hard-pine floors and staircases, walnut newels, rails, and balusters. It is heated with steam and hot-air pipes are connected with vent ducts to assist in ventilation. The boiler-room in the basement is constructed fire-proof, and all hot and cold air-chambers are built in solid masonry. The builders were Weston & Shepard, masons, and John Rawson, carpenter, Geo. A. Clough, architect. The cost of the land was \$24,703.70; building and furniture, \$112,444.89; total, \$137,148.59.

DEDICATION.

The Gaston School Building was begun in July, 1872, and completed August, 1873, and dedicated September 17, 1873, the city's anniversary.

The dedication exercises were prefaced by a piano-forte solo by Miss Mary L. Underwood, and the hymn "Father of Mercies" was sung by a choir of children picked from the South Boston schools, by Joseph B. Sharland, the musical director, who also played the accompaniment.

Rev. E. K. Alden, D. D., of the Phillips Church, offered the dedicatory prayer.

After singing by the choir of girls, "O Vales with Sunlight Smiling!" Alderman Wm. Sayward, Chairman of the Building Committee, with remarks on the growth, wants, and school accommodations of South Boston, formally presented the key to Mayor Henry L. Pierce, who made appropriate remarks and delivered the key to Francis H. Underwood, Chairman of the School, who spoke as follows:—

MR. MAYOR, — In behalf of my associates of the District Committee I accept the key of this school-house as a new evidence of the vital interest felt by you and by the City Council in the sacred cause of popular education. Our city seal has for its motto, "As God was to our fathers, so may He be to us." If we would invoke the benignant favor of our fathers' God upon us, we must, in spirit at least, put ourselves into their attitude of reverence towards him, and serve him by carrying out the great idea of free government, supported by free schools and free religion, which they began to establish. True it is that

"They builded better than they knew;"

but they, by a kind of intuition, — or rather, shall we not say, by divine inspiration? — as soon as a place of public worship was provided, set up, on the spot which our City Hall now faces, a school, the parent and predecessor of our present Latin School, the most ancient and honorable of our civic institutions. Surely it was prophetic that *School street* should front City Hall, and that its name should be ever present with those who are in places of trust, to remind them that intelligence is the only safeguard of order, the only prop of authority, and the chief glory of the English race in the New World.

In this beautiful building, the latest and probably the most commodious of the long series of school edifices which adorn our city, we have renewed proof of the care which you and

your associates of the City Council take that our system of instruction shall receive no detriment. The District Committee and the citizens, whose servants we are, recognize your provident and generous action, and will pronounce you worthy successors of the fathers in whose steps you tread. We receive the trust with grateful hearts, and we pledge to you and to the parents of the children who are to be educated here our best endeavors so to discharge our duties as to give every pupil the best mental and moral training which is attainable. In this spirit we approach our labors, and, with a deep sense of our responsibility, we reverently say, "As God was to our fathers, so may He be to us."

And now, sir, to you, as the master elect of this new school, the District Committee, whose organ I am, commits the custody of this key. This broad and populous district, with all its families of dear children, all these proud fathers and fond mothers, whose very heartstrings are bound up in their hopes for their daughters, will look to you with confidence, but with tender solicitude. Your faithful instruction, your wise counsel, your discreet conduct, your daily incitements to industry, to noble endeavor, to literary culture, to truth, virtue and honor, to courtesy and refined manners, and to reverence for the Creator, will be felt in every home, will brighten every fireside, will pulsate in every church and Sunday school. Happy the lot of the good teacher whose daily work, if rightly performed, is the best service of the Divine Master, and whose reward here and hereafter will be in the grateful memories of the children who will rise up and call his name blessed.

On receiving the key from Mr. Underwood, Mr. C. Goodwin Clark, Master, made the following reply:—

MR. CHAIRMAN,—The transfer of this key to me with this impressive charge, recounting your expectations and my responsibilities, impresses me anew with the dignity and influence of my office; and with anxiety I ask, "Who is sufficient for these things?" The charge you put upon me is the educational and moral welfare of the children of this district. I take this key as the symbol of your trust and confidence, as well as of my respon-

sibility, and relying, as I have done in the past, on your willing counsel, and aided by my long experience, I shall do all a teacher who loves his profession can, not to disappoint your reasonable expectations.

Mr. Chairman, I am pleased to have the keys of this new school-house presented by yourself. You have been my chairman in the Lincoln School for eight years; during that whole period our official relation has been the very pleasantest. No teacher has been appointed without conferring with the master, nor without his concurring judgment. Scarcely has a meeting of the Lincoln Committee been held where matters concerning the interests of the school were discussed that I have not been invited to be present. I appreciate this considerate treatment more than I can say, as a mark of your good-will and confidence. This generous, broad acknowledgment of a master's rights, founded on his responsibility, has lightened my labor and sweetened my rest. I am happy to say in the presence of these parents and citizens that in all that time you have not sought the appointment of a friend or a friend's friend, though they were numerous; in truth I know of no friend of yours at the time of appointment in this district. I am a true witness that you have discharged your official duty fearlessly and solely for the good of the schools. If the Lincoln School has been a success — if the schools of South Boston hold an honorable position among the schools of the city, it is because we have had good committees who have not appointed their friends to the detriment of the schools.

My fellow-masters present appreciate this. How attentively they listen. They know what discomfort is carried into many homes, and what demoralization follows at school from one weak appointment, and that a few such obstruct the work of all, robbing the children of the time they can ill afford to lose. Masters, like kings, have their anxieties. "Uneasy lies the head that wears a crown." Uneasy lies the master that has a vacancy. By your generous treatment I have been a happy master.

I have been spared that refined cruelty of seeing daily the evil effects of a bad appointment without the power to remedy. With this confidence continued, it will be my fault if the Gaston School is not worthy the name it bears, and does not rank with the good schools of Boston.

To the parents, who are present in large numbers to-day, this occasion is one of interest. From their many homes the dear children come, neatly dressed and decked by loving hands, — their careful preparation for school no morning duties, nor wearing cares of sickness or penury, tempt them to neglect. Anxious and troubled about many things, they forget not, with parting kiss, to enjoin their children to behave well at school, and to love and obey their teachers. Many tender hearts go after them during the day, wondering whether they are well and happy, and whether the teacher is kind, affectionate, and sympathetic, having eyes to see what beautiful children they are. It is a sweet picture, — a mother taking her little child for the first time to school and turning homeward, with reluctant feet and tearful eyes, to watch the delaying clock until the angel of the household comes — hours longer than any since she waited for her lingering lover. My heart knows it all. I am a teacher, and a parent also of four special perennial joys, and therefore especially prepared to teach much better than most of my fellow-masters, who average only one child and seventeen twenty-ninths apiece, some having no claim on the fraction.

We intend to make this a happy school; we believe the acquisition of knowledge should be pleasurable. We shall require no out-of-school lessons, and there will be little of keeping children after school. I will tell you something that you must not tell. Dull children are multiplied by dull teachers. Such think it devotion to detain children for lessons. I think it a want of skill. We do not believe children live for the school alone, but for the home. And that an important part of education is that they be helpful at home. Five hours of study and school a day are enough for any grammar-school girl. We prefer to keep a happy school with good results than a worried school with better results.

I have received the gratifying information from the Committee on the Girls' High School that hereafter they will not examine candidates for admission who are not fifteen years old. We have been sending them at fourteen and even thirteen years of age, as the committee truly say, to the disadvantage of the high school, of the grammar school, and of the girls themselves.

A Boston clergyman is reported to have prayed before his con-

gregation, thanking the Lord that they were born in Boston, for having been born in Boston, they needed not "to be born again." Not having been born in Boston myself, I have not that exalted opinion of its worth. But Mr. Ham and myself intend it shall be good fortune to a child to be born at City Point. In fact many parents are of that opinion now. In proof of this I may say over two hundred school babies were presented for admission to the primary schools in this district in the first week in September.

Gentlemen of the City Government, this is an enterprising community, that appreciates its school privileges. Two years ago you gave us the Capen Primary School; we had then one class in the basement of a church; now every seat is occupied. This is your question in mental arithmetic: If 200 children are presented every six months, how long will it take to fill a new primary house at the Point, seating 300? If you do not take immediate steps for the erection of that house, you will never overtake the children.

Parents, you have in the Gaston District a corps of teachers of whom I am proud. I know no better. They are earnest, devoted, successful teachers, with loving hearts in close sympathy with children; they fulfil the conditions of a good teacher.

" O'er wayward childhood would'st thou hold firm rule,
And sun thee in the light of happy faces?
Faith, love, and patience, these must be thy graces,
But in thine own heart let them first keep school."

Parents, present and absent, I ask for my assistants and myself your charity, your sympathy, your co-operation. We are working for the same end, — the good of your children.

Looking to the Divine Teacher for light, guidance, inspiration, to Him whose kindest words were for children — "Whoso shall receive one such little child in my name receiveth me," and who spoke severe words of him who should lead them astray; "It were better for him that a millstone were hanged about his neck and that he were drowned in the depth of the sea;" I promise you my best thought and work for their education.

I have no higher ambition, no holier purpose, than to be a good school-master.

A dedicatory hymn, written by H. H. Lincoln, of the Lyman School, music by J. B. Sharland, was sung; after which, the Chairman introduced Hon. Wm. Gaston, under whose mayoralty the building was begun, and whose name it bears.

MAYOR GASTON'S REMARKS.

MR. CHAIRMAN, — The consecration of this elegant structure to the cause of learning is an event which should be of interest to all. This ceremony will add another to the list of beautiful edifices which have been devoted to the same sacred purpose. It furnishes additional evidence of the generous spirit of the city and of its people in favor of popular education.

I think that among the causes of that pride which his Honor the Mayor feels, and may justly feel, in the city of which he is the honored chief magistrate, there are none greater or purer than those which are furnished by the condition of our public schools. With forty thousand bright young minds and warm young hearts eager for culture and development, led in the paths of learning and fortune by a thousand accomplished teachers, in structures like this, I think he may *well* be proud.

When we look around these spacious rooms and think what opportunities for culture will here be furnished to the thousands who are yet to come to them for instruction and strength, and who are afterwards to go from them to the struggles and conflicts, the alternate triumphs and defeats of life, I think it requires no spirit of prophecy to say, that from this edifice shall go forth influences which will carry blessings to the city, the State, and even the nation.

These influences will not be noisy or demonstrative; they will not be heralded by trumpets, but while they are quiet, they will be pervading and far reaching. Here, all will stand on even and common ground; the rich and the poor will be equal in the presence of science and learning. Here the rich can gain strength for the battle of life, and from this plane we may reverently thank God that the poor can look to the future with courage and with hope,

and in thus looking before them, they will see no summits on which their feet may not stand. I said that this should be an occasion of interest to all. It certainly is an occasion of peculiar interest to me. To have one's name associated with the cause of learning, in a form like this, is worthy of *any one's* ambition, and I am here to-day to recognize the great honor, and to thank the committee and the people for it.

Short addresses were also made by Dr. Samuel Eliot, Master of the "Girls' High School," Daniel B. Hagar, of the Salem Normal School, Walter Smith, State Director of Art-Education, and Rev. George A. Thayer. Mr. George A. Clough, the architect, was introduced to the audience and warmly received.

The exercises closed by singing "Old Hundred."

The following is the Committee on the Gaston School:—

FRANCIS H. UNDERWOOD,	JOHN S. H. FOGG,
<i>Chairman.</i>	HUGH J. TOLAND,
EDWIN C. LEONARD,	ARTHUR H. WILSON,
<i>Secretary.</i>	GEORGE A. THAYER,
WARREN P. ADAMS,	JOSEPH H. ALLEN.

The school was organized with the following teachers:—

C. GOODWIN CLARK, <i>Master.</i>	ELLEN R. WYMAN.
CLARA S. NYE, <i>Master's Assistant.</i>	MARGARET REID, <i>Sew'g Teacher</i>
LYDIA CURTIS, <i>Head Assistant.</i>	

ASSISTANTS.

HATTIE E. MARCY,
SARAH C. WINN,
MYRA S. BUTTERFIELD,
ABBY M. HOLDER,
SUSAN CARTY,

PRIMARY TEACHERS.

ELIZABETH M. EASTON,
FANNIE BLANCHARD,
MARY A. CROSBY,
JOSEPHINE F. KROGMAN,
MARY CUTTER,
MATILDA STEPHENS.

SCHOOL-HOUSES.

Name.	Location.	No. feet in lot.	When built.	No. of Rooms.	Remarks.
Adams	Sumner street . . .	14,100	1856	18 and hall	
Andrew	Washington Village	11,486	1865	12	
Atherton	Columbiast., W'd 16	25,087	1872	6 "	
Avon place	Highlands	10,057	1851	2	
Andrews	Genessee street . .	5,393	1848	3	
Austin	Paris street	5,360	1849	6	
Appleton street . .		18,454	1870	10	
Boylston	Washington street	15,073	1845	13 "	Ward Room No. 10 in this building, and an evening school.
Bowdoin	Myrtle street . . .	4,892	1848	12	
Bowditch	South street	12,006	1862	14 "	Branch of the High School and evening and drawing-school in this building.
Bigelow	Fourth street . . .	12,660	1850	14 "	
Brimmer	Common street . .	11,097	1843	14 "	
Baldwin	Grant place	6,139	1864	6	
Chapman	Eutaw street . . .	13,040	1850	10 "	
Comins	Tremont street . .	23,780	1856	13 "	Remodelled, 1869.
Comins Branch . .	Smith street	6,952	1849	2	
" "	Francis street . . .	12,075	1853	2	Rebuilt, 1861.
Codman street . .	Ward 16	43,560	1861	2	
Cheever	Thacher street . .	2,003	1846	3	
Cottage place . .	Highlands	13,500	1859	4	
Channing	Cove street	7,140	1866	9	
Cook	Groton street . . .	4,922	1852	6	
Cushman	Parmenter street .	* . . .	1867	16	
Clinch	F street	13,483	1871	6	
Capen	Sixth street	12,375	1871	6	
Dwight	Springfield street .	19,125	1857	14 "	
Dudley	Bartlett street . . .	7,950	1846	6	Rebuilt, 1865.
Dearborn	Dearborn court . .	38,636	1852	14 "	Rebuilt, 1870.
Dwight Pri.	Rutland street . . .	7,850	1851	6	
Dean	Wall street	3,649	1853	6	

* The number of feet of land upon which this building stands is included in those given to the Hancock.

Name.	Location.	No. feet in lot.	When built.	No. of Rooms.	Remarks.
Drake	C street	10,260	1869	6	
Elliot	N. Bennet street .	11,077	1838	14 and hall	Rebuilt, 1860.
Everett	Summer street, W'd 16	29,300	1855	7	
Everett	Camden street . .	32,409	1860	14 "	
East st. place . .	East street place .	2,706	1849	4	
Emerson	Poplar street . . .	5,924	1861	6	
Eustis street . .	Boston Highlands .	13,543	1848	4	Enlarged, 1858.
Franklin	Ringgold street . .	16,439	1859	14 "	
Freeman	Charter street . . .	5,247	1868	6	
Franklin place .	Highlands	8,098	1865	4	
Gibson	School st., W'd 16 .	44,800	1857	6	
Gaston	L st., So. Boston .	18,450	1872	14 "	
Guild	East street	7,250	1866	12	
George street . .	Highlands	18,894	1861	6	
Grant	Phillips street . . .	3,744	1852	4 "	
High and Latin .	Bedford street . .	12,980	1844	16 "	Additional story added, 1863.
Hancock	Richmond street .	28,197	1847	14 "	
High	Kenilworth street .	6,667	1861	4	Boston Highlands.
High	Dorch'ter avenue, Ward 16	59,340	1870	6 "	
Harris	Adams st., Ward 16	37,150	1861	8 "	
Hawes	Broadway	14,972	1823	8	
Heath street . .	Highlands	10,557	1837	2	
Ingraham	Sheafe street . . .	2,198	1848	3	
Lawrence	B and Third sts. .	14,343	1856	14 "	
Lincoln	Broadway	17,560	1859	14 "	
Lyman	Paris street	26,200	1870	14 "	Rebuilt, 1872.
Lewis	Sherman street . .	27,830	1868	12 "	
Mayhew	Hawkins street . .	9,625	1847	10 "	
Mather	Meeting House Hill	6,059	1872	10 "	
Minot	Walnut street, Ward 16	16,790	1856	7	
Munroe street . .	Highlands	11,910	1854	2	Rebuilt, 1857.
Milldam	Highlands		1849	2	On land not owned by the city.
Mather	Broadway	10,160	1842	10	

Name.	Location.	No. feet in lot.	When built.	No. of Rooms.	Remarks.
Mt. Pleasant av.	Highlands	9,510	1847	2	
Normal	Newton street . . .	30,520	1870	66 and halls	The number of rooms include those for reci- tations and containing apparatus.
Norcross	D street	12,075	1868	12 and hall	
N. Margin street	N. Margin street .	1,661	1837	2	
Old Lyman . . .	Meridian street . .	13,616	1846		Branch Library and Ward-room 1, in this building.
Old High	Dorchester avenue, Ward 16	34,460	. . .	4	Unoccupied.
Old Mather . . .	Meeting House Hill		1856	7	Unoccupied.
Phillips	Anderson street . .	11,190	1862	14 "	
Prescott	Prescott street . . .	39,952	1865	16 "	
Pierpont	Hudson street . . .	4,216	1850	4	
Phillips street . .	Highlands	20,595	1867	8	
Pormort	Snelling place . . .	4,373	1855	6	
Parkman	Silver street	5,306	1848	6	
Quincy	Tyler Street	11,766	1847	14 "	Burnt 1859. Rebuilt 1860. Bell tower built 1872.
Rice	Dartmouth street .	27,125	1869	14 "	
Rice, Pr.	Concord street . .	10,756	1845	10	Ward-room, Ward 11, in this building.
Shurtleff	Dorchester street .	41,000	1869	14 "	
Sherwin	Madison square . .	32,040	1870	16 "	
Stoughton	River st., Ward 16	29,725	1856	8	
Smith	Joy street	1,938	1834	2	
Simonds	Broadway		1840	3	On Hawes School-house lot.
Shurtleff Pr. . .	Tyler street	3,900	1855	6	
Sharp	Anderson street . .	5,611	. . .	6	Ward-room, Ward 6, in this building.
Somerset street .		5,488	. . .	8	Formerly the Normal Training School.
Savage	Harrison avenue .	5,537	1862	4	Ward-room 5 in this building.
Starr King . . .	Tennyson street . .	10,318	1870	10 "	
Skinner	Fayette street . . .	5,242	1870	6	
Tileston	Norfolk street, Ward 16	83,640	1868	8 "	
Tappan	Lexington street .	4,025	1846	3	
Tuckerman . . .	City Point	11,655	1850	6	Enlarged in 1861.
Thornton street .	Highlands	6,640	1847	2	
Vernon street . .	Highlands	7,675	1849	4	Enlarged in 1861.
Winthrop	Tremont street . .	15,078	1835	14 "	

Name.	Location.	No. feet in lot.	When built.	No. of Rooms.	Remarks.
Wells	Blossom street . .	71,657	1868	10 and hall	Ward-room, Ward 3, in this building.
Washington . . .	Washington st., Boston Highl'ds .	14,390	1840	7	Enlarged, 1847.
Webb	Porter street . . .	7,492	1853	6	
Webster	Webster street . .	5,036	1852	6	
Ware	N. Bennet street .	6,439	1862	4	Ward-room, Ward 2, in this building.
Wait	Shawmut avenue .	10,974	1860	8	
Winthrop street .	Highlands	9,775	1857	4	
Winchell	Blossom street . .	5,000	1845	5	Remodelled, 1870.
Way street . . .	Way street	2,505	1850	3	
Weston street . .	Highlands	14,916	1854	4	
Yeoman street .	"	18,200	1870	12	
High	Monument square .				Charlestown.
Bunker Hill . . .	Baldwin street . .				"
Harvard	Bow street				"
Prescott	Elm street				"
Warren	Summer street . .				"
Winthrop	Bunker Hill street .				"
Primary School .	Harvard street . .				"
"	Cross street				"
"	Bunker Hill street .				"
"	" "				"
"	Mead street				"
"	Kingston street .	5,400			"
"	Moulton street . .				"
"	Soley street				"
"	Common street . .				"
"	Medford street . .				"
"	"				"
"	Chauncy place . .				"
"	Polk street				"
High	Academy Hill . . .	58,822			Brighton.
Bennett	Winship place . .	24,270			"
Harvard	No. Harvard st. . .	21,770			"
Everett, Primary	Cor. Auburn and Pearl streets . .	44,270			"
Anburn, " . . .	School street . . .				"

Name.	Location.	No. feet in lot.	When built.	No. of Rooms.	Remarks.
Oak square, Prim.	Oak square . . .				Brighton
Rockland, "	Academy Hill . .				"
Union st., "	Union street . . .	71,049			"
Webster	Beacon street . .				"
Webster	Webster place . .				"
Eliot, High . . .	Elm				West Roxbury.
Central	Burroughs street .				"
Florence	Florence street .				"
Hillside	Elm				"
Mount Vernon .	Mt. Vernon street				"
Primary School .	Shawmut avenue				"
"	"				"
"	Eliot street . . .				"
"	Child street . . .				"
"	Canterbury street				"
"	Poplar street . .				"
"	Baker street . . .				"
"	Germantown . . .				"
"	Curtis street . . .				"
Bennett	Ches't Hill avenue, Brighton				Building erecting.
Grammar School- house	Dudley street . .	12,000			"
Grammar School- house	Centre street . .	26,250			"
Primary School- house	Princeton street .	17,400			"
Primary School- house	Lexington street	5,000			"

In addition to the foregoing, the following rooms are occupied by schools, those marked (*) being hired at an annual rental of \$14,546.00; the others are in buildings owned by the city.

Number of Rooms.	Location.
Two*	Chapel, Bennington street.
Three*	Rice building.
One*	Day's Chapel, Parker street.
Four	Armory building, Cooper street.
Two*	Jenkins' Hall, Broadway, branch of Lawrence School.
Four*	Pemberton square, School for Deaf Mutes.
Two*	Church on D street.
Two*	E street vestry.
One*	Dorchester avenue, opposite Broadway.
Two*	Monmouth street.
Two*	1419 Tremont street.
One*	Bennington street.
One*	Reed's Hall for Evening School.
Three*	Sargent's Block, Washington street.
One*	Warwick street.
Three*	Bromley park.
One*	Cox building, Dudley street.
One*	Cor. of Shawmut avenue and Codman park.
Two*	Everett avenue, Ward 16.
Two*	Boston street, Ward 16.
Two*	Unitarian church, Neponset.
Six*	Gogin's building, Dorchester street.
Two*	Bank building, corner of E street and Broadway.
One*	Saratoga street, East Boston.
Four*	Trenton street, East Boston.
One*	Francis street, Ward 15.

ORGANIZATION
OF
SCHOOL COMMITTEE,
FOR 1874.

HON. SAMUEL C. COBB, *Mayor, ex officio.*

EDWARD O. SHEPARD, *President of the Common Council, ex officio.*

Ward 1.

Reuben Peterson, Jr.,
Willard S. Allen,
John Noble,

Benj. F. Campbell,
Henry S. Washburn,
George H. Plummer.

Ward 2.

James M. Badger,
Michael Moran,
George D. Ricker,

William J. Porter,
John W. Fraser.

Ward 3.

Lucius Slade,
Samuel H. Wentworth,
James A. McDonough,

John E. Quinn,
Orran G. Cilley,
William C. Williamson.

Ward 4.

Nath'l B. Shurtleff,
Ezra Palmer,
Edward H. Dunn,

John T. Beckley,
A. Kendall Tilden,
Adino B. Hall.

Ward 5.

Edward B. Rankin,
Henry J. Colman,
John M. Maguire,

John J. Murphy,
John P. Ordway,
David J. O'Connor.

Ward 6.

Samuel K. Lothrop,
James Reed,
Hall Curtis,

Charles C. Perkins,
Joseph Willard.

Ward 7.

Christopher A. Connor,
Edward C. Leonard,
Hugh J. Toland,

John E. Fitzgerald,
Richard J. Fennelly,
Joseph D. Fallon.

Ward 8.

William Woods,
David W. Foster,
George L. Chaney,

George E. Filkins,
Henry P. Shattuck,
Francis Hayden.

Ward 9.

Francis D. Stedman,
Charles J. Prescott,
John P. Reynolds,

Charles Hutchins,
John C. J. Brown.

Ward 10.

Lyman Mason,
Geo. F. Bigelow,
Charles L. Flint,

William H. Baldwin,
Joseph H. Gray,
Wm. Burnet Wright.

Ward 11.

Wm. H. Learnard, Jr.,
Stephen G. Deblois,
William B. Merrill,

Samuel B. Cruft,
Edward W. Kinsley.

Ward 12.

John S. H. Fogg,
George A. Thayer,
Arthur H. Wilson,

Joseph H. Allen,
Francis H. Underwood,
Warren P. Adams.

Ward 13.

George H. Lloyd,
James Morse,
Edward G. Morse,

John D. Carty,
Joseph A. Tucker,
Franklin Williams.

Ward 14.

Joel Seaverns,
John O. Means,
Ira Allen,

John Kneeland,
C. Edwin Miles.

Ward 15.

James Waldock,
Albert E. Dunning,
George F. Emery,

Joseph O'Kane,
Charles K. Dillaway,
Geo. M. Hobbs.

Ward 16.

William P. Leavitt,
John H. McKendry,
William T. Adams,

John W. Porter,
Frederick P. Moseley,
James S. Greene.

Ward 17.

Albert H. Chapman,
Francis B. Beaumont,
George S. Frost,

Pelotiah R. Tripp,
Dan. S. Smalley,
John E. Blakemore.

Ward 19.

Joseph Bennett,
James H. Rice,

Michael Norton.
——— ———

Ward 20.

Retire H. Parker,
James F. Southworth,

James A. McDonald.
——— ———

Ward 21.

William H. Finney,
Nahum Chapin,

George B. Neal.
——— ———

Ward 22.

Charles E. Daniels,
George H. Marden,

Edwin H. Darling.
——— ———

STANDING COMMITTEES.

Elections.

Joseph Willard, <i>Chairman</i> ,	John E. Fitzgerald,
Hall Curtis,	William C. Williamson,
Reuben Peterson, Jr.,	Joseph H. Gray,
	George M. Hobbs.

Rules and Regulations.

Lyman Mason, <i>Chairman</i> ,	William H. Baldwin,
Nathaniel B. Shurtleff,	Joel Seaverns,
John W. Fraser,	John Kneeland,
	John P. Reynolds.

Salaries.

J. Coffin Jones Brown, <i>Chairman</i> ,	Christopher A. Connor,
Henry S. Washburn,	Joseph H. Gray,
William T. Adams,	George H. Marden,
	George H. Plummer.

Accounts.

William B. Merrill, <i>Chairman</i> ,	Lucius Slade,
Wm. H. Learnard, Jr.,	Warren P. Adams,
George D. Ricker,	Francis D. Stedman,
	Charles J. Prescott.

Text-Books.

S. K. Lothrop, <i>Chairman</i> ,	Ezra Palmer,
Charles Hutchins,	Charles L. Flint,
Samuel H. Wentworth,	William H. Finny,
	Joseph D. Fallon.

School-Houses and School Sections.

Joseph A. Tucker, <i>Chairman</i> ,	Hugh J. Toland,
John Noble,	David W. Foster,
John W. Porter,	Nahum Chapin,
	Edward W. Kinsley.

Music.

John P. Ordway, <i>Chairman</i> ,	William B. Merrill,
Warren P. Adams,	Charles C. Perkins,
Charles L. Flint,	George B. Neal,
	James Reed.

Printing.

Edward B. Rankin, <i>Chairman</i> ,	Joseph O'Kane,
Joseph A. Tucker,	Michael Norton,
Arthur H. Wilson,	A. Kendall Tilden,
	James A. McDonough.

Vocal and Physical Culture, and Military Drill.

Lucius Slade, <i>Chairman</i> .	George E. Filkins,
Henry P. Shattuck,	Franklin Williams,
William Woods,	Pelatiah R. Tripp,
	A. K. Tilden.

Drawing.

Charles C. Perkins, <i>Chairman</i> ,	David W. Foster,
J. Coffin Jones Brown,	Francis H. Underwood,
James Morse,	William B. Merrill,
	Retire H. Parker.

Evening Schools.

Hall Curtis, <i>Chairman</i> ,	William H. Baldwin,
George D. Ricker,	Willard S. Allen,
John S. H. Fogg,	John H. McKendry,
	Franklin Williams.

Schools for Licensed Minors.

Samuel B. Cruft, <i>Chairman</i> ,	Stephen G. Deblois,
Richard J. Fennelly,	Michael Moran,
	A. Kendall Tilden.

School for Deaf Mutes.

Ira Allen, *Chairman*,
Henry S. Washburn,
Lucius Slade,
Samuel B. Cruft,

Francis D. Stedman,
William H. Learnard.

Kindergarten School.

William H. Baldwin, *Chairman*,
Hall Curtis,
Henry P. Shattuck,
John P. Reynolds,

John W. Porter,
Geo. F. Bigelow.

Industrial Schools.

S. K. Lothrop, *Chairman*,
Hall Curtis,
Nathaniel B. Shurtleff,
William T. Adams,

Charles K. Dillaway.

LATIN AND HIGH SCHOOLS.

PUBLIC LATIN SCHOOL.

Bedford street.

COMMITTEE.

Henry S. Washburn, <i>Chairman.</i>	James Reed, <i>Secretary.</i>
Michael Moran,	Joseph A. Tucker,
Wm. C. Williamson,	John Kneeland,
Nath'l B. Shurtleff,	George F. Emery,
John P. Ordway,	William T. Adams,
Joseph D. Fallon,	Albert H. Chapman,
David W. Foster,	Michael Norton,
John P. Reynolds,	James A. McDonald,
Wm. Burnet Wright,	George B. Neal,
Samuel B. Cruft,	Edwin H. Darling.
George A. Thayer,	

TEACHERS.

Francis Gardner, <i>Head Master.</i>	Augustine M. Gay, <i>Master.</i>
Moses Merrill, <i>Master.</i>	Josiah G. Dearborn, <i>Master.</i>
George W. Minns, <i>Master.</i>	Charles J. Capen, <i>Master.</i>
Joseph W. Chadwick, <i>Master.</i>	Arthur I. Fiske, <i>Master.</i>
Ernest Young, <i>Master.</i>	John L. Stoddard, <i>Master.</i>
Prospère Morand, <i>Teacher of French.</i>	Henry Hitchings, <i>Teacher of Drawing.</i>
Julius Eichberg, <i>Teacher of Music.</i>	Lieut. Col. Hobart Moore, <i>Teacher of</i>
William Thompson, <i>Janitor.</i>	<i>Military Drill.</i>

ENGLISH HIGH SCHOOL.

Bedford street.

COMMITTEE.

S. K. Lothrop, <i>Chairman.</i>	John Noble, <i>Secretary.</i>
James M. Badger,	James Morse,

James A. McDonough,
A. Kendall Tilden,
John M. Maguire,
Hugh J. Toland,
William Woods,
Charles J. Prescott,
Lyman Mason,
Edward W. Kinsley,
Joseph H. Allen,

Ira Allen,
James Waldoek,
Frederick P. Moseley,
Francis B. Beaumont,
Joseph Bennett,
James F. Southworth,
Nahum Chapin,
George H. Marden.

TEACHERS.

Charles M. Cumston, <i>Head Master.</i>	Luther W. Anderson, <i>Master.</i>
Robert E. Babson, <i>Master.</i>	L. Hall Grandgent, <i>Master.</i>
Albert Hale, <i>Master.</i>	John P. Brown, <i>Master.</i>

SUB-MASTERS.

Charles B. Travis,	Charles J. Lincoln,
Charles H. Cumston,	John O. Norris,
Lucius H. Buckingham,	Thomas J. Emery,
John F. Casey,	Charles O. Whitman,
George F. Leonard,	Manson Seavy,
Jerome B. Poole,	William G. Nowell,
Henry Hitchings, <i>Teacher of Drawing.</i>	Edward K. Clark, <i>Ass't Teacher of Drawing.</i>
Nicolas F. Dracopolis, <i>Teacher of French.</i>	Julius Eichberg, <i>Teacher of Music.</i>
	Lieut.-Col. Hobart Moore, <i>Teacher of Military Drill.</i>

 NORMAL SCHOOL.

West Newton street.

COMMITTEE.

Charles Hutchins, <i>Chairman.</i>	John Noble, <i>Secretary.</i>
William B. Merrill,	George A. Thayer,
Wm. H. Learnard, Jr.,	John Kneeland.
John P. Ordway,	

TEACHERS.

Larkin Dunton, <i>Head Master.</i>	Jenny H. Stickney, <i>Head Assistant.</i>
Florence W. Stetson, <i>Assistant.</i>	

GIRLS' HIGH SCHOOL.

West Newton street.

Charles L. Flint, *Chairman*.
 Willard S. Allen,
 George D. Ricker,
 Samuel H. Wentworth,
 John T. Beckley,
 Edward B. Rankin,
 Charles C. Perkins,
 John E. Fitzgerald,
 Henry P. Shattuck,
 Charles Hutchins,
 Stephen G. Deblois,

Warren P. Adams, *Secretary*.
 Edward G. Morse,
 ——— ———
 Charles K. Dillaway,
 William P. Leavitt,
 Dan S. Smalley,
 Charles H. B. Breck,
 Retire H. Parker,
 William H. Finney,
 Charles E. Daniels.

.TEACHERS.

Samuel Eliot, <i>Head Master</i> .	Harriet E. Caryl, <i>Master's Assistant</i> .
Margaret A. Badger, <i>Master's Assistant</i> .	Bessie T. Capen, <i>Teacher of Chemistry</i> .
Emma A. Temple, <i>Head Assistant</i> ,	Katherine Knapp, <i>Head Assistant</i> .
Mary E. Scates, <i>Head Assistant</i> .	Adeline L. Sylvester, <i>Head Assistant</i> .

ASSISTANTS.

Elizabeth C. Light,	Lucy O. Fessenden,
Adeline S. Tufts,	Alice M. Wellington,
Emerette O. Patch,	Rebecca R. Joslin,
S. Annie Shorey,	Augusta C. Kimball,
Ellen O. Swain,	Florena Gray,
Lucy R. Woods,	Ellen M. Folsom,
Mary J. Allison,	Laura B. White,
Lillie B. Holbrook,	Prospère Morand, <i>Teacher of French</i> .
E. C. F. Crauss, <i>Teacher of German</i> .	Julius Eichberg, <i>Teacher of Music</i> .
Mary E. Carter, <i>Teacher of Drawing</i> .	Mercy A. Bailey, <i>Teacher of Drawing</i> .

ROXBURY HIGH SCHOOL.

Kenilworth street.

COMMITTEE.

Ira Allen, <i>Chairman</i> .	Albert E. Dunning, <i>Secretary</i> .
Reuben Peterson, Jr.,	William H. Learnard, Jr.,
William J. Porter,	————— ————
Lucius Slade,	Joseph A. Tucker,

George Fabyan,
Henry J. Colman,
Hall Curtis,
John E. Fitzgerald,
George L. Chaney,
Charles J. Prescott,

William T. Adams,
George S. Frost,
Charles H. B. Breck,
Retire H. Parker,
William H. Finney,
Charles E. Daniels.

TEACHERS.

Samuel M. Weston, *Head Master.* M. L. Tincker, *Head Assistant.*

ASSISTANTS.

Emily Weeks,
Helen A. Gardner,
Clara H. Balch,
Benj. F. Nutting, *Teacher of Drawing.*
John F. Stein, *Teacher of German.*

Eliza D. Gardner,
Edna F. Calder,
Julius Eichberg, *Teacher of Music.*
M. de Maltchycé, *Teacher of French.*
Lieut.-Col. Hobart Moore, *Teacher of Military Drill.*

DORCHESTER HIGH SCHOOL.

Centre street, near Dorchester avenue.

COMMITTEE.

William T. Adams, *Chairman.*
John H. McKendry,
Nath'l B. Shurtleff,
Frederick P. Moseley,

John W. Porter, *Secretary.*
John O. Means,
William T. Leavitt.

TEACHERS.

Elbridge Smith, *Head Master.*

Mary W. Hall, *Head Assistant.*

ASSISTANTS.

Rebecca V. Humphrey,
Annie H. Noble,
John F. Stein, *German Teacher.*
Julius Eichberg, *Music Teacher.*

Harriet B. Luther,
Charles De Lagarlière, *French Teacher.*
Mercy A. Bailey, *Drawing Teacher.*
Lieut.-Col. Hobart Moore, *Teacher of Military Drill.*

CHARLESTOWN HIGH SCHOOL.

COMMITTEE.

George B. Neal, *Chairman*.
 George H. Marden,
 Retire H. Parker,
 James A. McDonald,

William H. Finney, *Secretary*.
 George Fabyan,
 Joseph Willard.

TEACHERS.

Caleb Emery, *Head Master*.
 L. B. Pillsbury, *Sub-Master*.

Alfred P. Gage, *Master of English Department*.
 Katherine Whitney, *First Assistant*. Emma G. Shaw, *Second Assistant*.

ASSISTANTS.

Susan A. Getchell,
 A. E. Somes.

Anna M. Wilde,

WEST ROXBURY HIGH SCHOOL.

Elm street, West Roxbury.

COMMITTEE.

Dan. S. Smalley, *Chairman*.
 John E. Blakemore,
 Pelatiah R. Tripp,
 Francis B. Beaumont,

Albert H. Chapman, *Secretary*.
 Albert E. Dunning,
 George S. Frost.

TEACHERS.

E. W. Howe, *Head Master*.

Frank E. Dimick, *Master*.

ASSISTANTS.

Mary E. Lothrop,
 Sarah M. Urann, *Teacher of Drawing*.

Annie B. Lord,
 L. H. Garlin, *Teacher of Music*.
 Miss M. Richardson, *Teacher of Drawing*.

BRIGHTON HIGH SCHOOL.

Academy Hill.

COMMITTEE.

Joseph Bennett, *Chairman.*
 Charles H. B. Breck,
 Charles K. Dillaway,

Michael Norton, *Secretary.*
 Ira Allen.

TEACHERS.

Benjamin Wormelle, *Principal.* Anna J. George, *First Assistant.*
 Sarah E. Waugh, *Second Assistant.* Alfred Morand, *Teacher of French.*
 C. E. Whiting, *Teacher of Music.*

DEPARTMENT OF VOCAL MUSIC.

Julius Eichberg, General Supervisor of Music, and Teacher of Music in the High Schools, 154 Tremont street.
 Luther Whiting Mason, Director of Music in the Primary Schools, 5 Sharon street. Address at the Rooms of the Board, City Hall.
 H. E. Holt, Director of Music in the Grammar Schools, third, fourth, fifth and sixth classes. Address at the Rooms of the Board, City Hall.
 Joseph B. Sharland, Director and Teacher of Music in the Grammar Schools, first and second classes, 25 Hanson street.
 Hiram Wilde, Assistant Teacher of Music, 762 Washington street.

DEPARTMENT OF DRAWING.

Walter Smith, Normal Art Instructor, and General Supervisor of Drawing City Point, South Boston.

SPECIAL INSTRUCTORS.

Charles A. Barry, High Schools in West Roxbury and Brighton. Address, at the City Hall.
 Henry Hitchings, English High School and Latin School. Address, Dedham.
 Edward K. Clark, Assistant, English High School.
 Mary Carter, Girls' High School, 39 Somerset street.
 Mercy A. Bailey, Girls' High School, Normal School, and Dorchester High School, Creighton House.
 Benjamin F. Nutting, Roxbury High School.

Lucas Baker, Charlestown High School.

These Instructors also supervise the Drawing in the Grammar and Primary Schools as far as their time allows.

FREE EVENING DRAWING SCHOOLS.

Walter Smith, Director of the Classes.

Monday, Tuesday, Thursday and Friday, 7 to 9 P. M.

Appleton-street School-house.

G. H. Bartlett, *Principal.*

J. H. Eichberg, *Assistant.*

J. A. Beér, *Assistant.*

Starr King School-house, Tennyson street.

Clarence S. Ward, *Principal.*

George H. Young, J. L. Frisbee, George Jepson, and A. W. Johnson,
Assistants.

South street.

C. W. Damon, *Assistant.*

H. N. Mudge, *Assistant.*

Dorchester High School.

George Jepson, *Assistant.*

Peter Roos, *Assistant*

THE SCHOOL DISTRICTS

ARRANGED IN ALPHABETICAL ORDER.

ADAMS SCHOOL DISTRICT.

COMMITTEE.

George H. Plummer, <i>Chairman.</i>	Benj. F. Campbell, <i>Secretary.</i>
Henry S. Washburn,	Willard S. Allen,
John Noble,	Edward H. Dunn.
Reuben Peterson, Jr.,	

ADAMS SCHOOL.

Belmont square, East Boston.

Robert C. Metcalf, <i>Master.</i>	Frank F. Preble, <i>Sub-Master.</i>
Mary M. Morse, <i>Master's Assistant.</i>	Ellen M. Robbins, <i>Head Assistant.</i>
Mary A. Davis, <i>Head Assistant.</i>	Lucy A. Wiggin, <i>Head Assistant.</i>

ASSISTANTS.

Clara Robbins,	Harriett Sturtevant,
Clara J. Doane,	Sarah E. McPhaill,
Lina H. Cook,	Sarah A. Cook,
Margaret E. Robbins, <i>Sewing Teacher.</i>	

PRIMARY SCHOOLS.

Adams School.

Ellen James.	<i>Sub-Committee,</i> Mr. Plummer.
Rosa L. Morse.	“ Mr. Washburn.
Mary H. Allen.	“ Mr. Plummer.
Mary E. Wiggin.	“ Mr. Dunn.
Eliza A. Wiggin.	“ “
Anna E. Reed.	“ “

Webster street.

Grace E. Wasgatt.

Sub-Committee, Mr. Campbell.Emily C. Morse, *Spec. Instruction*.

" Mr. Washburn.

ANDREW SCHOOL DISTRICT.

COMMITTEE.

Joseph H. Allen, *Chairman*.Hugh J. Toland, *Secretary*.

Warren P. Adams,

John S. H. Fogg,

Francis H. Underwood,

Christopher A. Connor,

George A. Thayer,

Frederick P. Moseley.

ANDREW SCHOOL.

*Dorchester street, Washington Village.*Leander Waterman, *Master*.J. Martin Dill, *Sub-Master*.Elizabeth A. Winward, *Master's As-*
*stant.*Henrietta L. Dwyer, *Head Assistant*.

ASSISTANTS.

Adelaide E. H. Groso,

Emma C. Perkins,

Mary E. Perkins,

Alice A. Bailey,

Lucy M. Marsh,

Mercy L. Parr, *Teacher of Sewing*.

PRIMARY SCHOOLS.

Ticknor Building.

Martha L. Moody.

Sub-Committee, Mr. Allen.

Mary S. Beebe.

" Mr. Thayer.

Alice L. Littlefield.

" Mr. Connor.

Gogin Building.

Mary A. Jenkins.

Sub-Committee, Mr. Allen.

Jessie C. Tileston.

" Mr. Toland.

Susan E. C. Molloy.

" Mr. Adams.

Rosabel V. Aldrich.

" Mr. Underwood.

Elizabeth Ordway.

" Mr. Moseley.

BIGELOW SCHOOL DISTRICT.

COMMITTEE.

Warren P. Adams, <i>Chairman.</i>	Joseph D. Fallon, <i>Secretary.</i>
Francis H. Underwood,	Arthur H. Wilson,
Christopher A. Connor,	Hugh J. Toland,
Richard J. Fennelly,	George A. Thayer,
Joseph H. Allen,	

BIGELOW SCHOOL.

Fourth street, Corner of E street.

Thomas H. Barnes, <i>Master.</i>	Fred. O. Ellis, <i>Sub-Master.</i>
J. G. Bassett, <i>Usher.</i>	Clara E. Farrington, <i>Master's Head</i>
Amelia B. Coe, <i>Head Assistant.</i>	<i>Assistant.</i>

ASSISTANTS.

Eliza B. Haskell,	Harriet A. Watson,
Ellen Coe,	Mary Nichols,
Mary L. Lufkin,	Lucinda P. Bowley,
Celinda Seaver,	Lucy C. Bartlett,
Malvena Tenney,	Abby J. Adams.
Samuel P. Howard, <i>Janitor.</i>	

PRIMARY SCHOOLS.

Hawes Hall, Broadway.

Anna C. Gill,	Abby B. Kent,
Alice Danforth,	Lucy E. T. Tinkham,
Ann J. Lyon,	Mary P. Colburn,
Mary E. Johnston,	Harriet A. Clapp, <i>Special Instruction.</i>

Rear Hawes Hall.

Tiley A. Bolkcom,	Emily T. Smith.
Mary L. Howard,	

Corner of Dorchester and Fourth streets.

Josephine B. Cherrington,	Sarah A. Graham.
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Bank Building, E street.

Elizabeth G. Bailey.

BOWDITCH SCHOOL DISTRICT.

COMMITTEE.

John P. Ordway, <i>Chairman</i> .	Henry J. Colman, <i>Secretary</i> .
John P. Reynolds,	Edward B. Bankin,
Richard J. Fennelly,	John W. Fraser,
Edward C. Leonard,	John J. Murphy,
William T. Adams,	David J. O'Conner.
John M. Maguire,	

BOWDITCH SCHOOL.

Corner of East and Cove streets.

Alfred Hewins, <i>Master</i> .	Susan H. Thaxter, <i>Master's Assistant</i> .
Mary M. T. Foley, <i>Head Assistant</i> .	Eliza M. Evert, <i>Head Assistant</i> .

ASSISTANTS.

Caroline E. Jennison,	Margaret E. Sheehan,
Ruth H. Clapp,	Lydia E. Bacon,
Hannah E. G. Gleason,	——— ———,
Eliza Baxter, <i>Sewing Teacher</i> .	

PRIMARY SCHOOLS.

East street.

Amelia E. N. Treadwell.	<i>Sub-Committee</i> , Mr. Maguire.
Octavia C. Heard.	" Mr. Adams.
Ellen L. F. Collins.	" Mr. Murphy.
Priscilla Johnson.	" Mr. Reynolds.
Ellen E. Leach.	" Mr. Fennelly.
Sarah E. Lewis.	" Mr. Leonard.
Maria J. Coburn.	" Mr. Rankin.
——— ———.	" Mr. Ordway.
Julia M. Driscoll.	" "
Susan Frizzell.	" Mr. Fraser.
Mary J. Crotty.	" Mr. O'Conner.
Marian A. Flynn.	" Mr. Leonard.

East-street place.

Louisa Bowker.	<i>Sub-Committee</i> , Mr. Colman.
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BOWDOIN SCHOOL DISTRICT.

COMMITTEE.

Hall Curtis, *Chairman*.
 James Reed,
 Ezra Palmer,
 Samuel H. Wentworth,
 Edward H. Dunn,

John T. Beckley, *Secretary*.
 John E. Quinn,
 William C. Williamson,
 Adino B. Hall.

BOWDOIN SCHOOL.

Myrtle street.

Daniel C. Brown, *Master*.
 Mary Young, *Head Assistant*.

Sarah J. Mills, *Master's Assistant*.
 Sarah O. Brickett, *Head Assistant*.

ASSISTANTS.

Eliza A. Fay,
 Irene W. Wentworth,
 Ada L. Cushman,
 S. Frances Perry,

Sophia B. Horr,
 Martha A. Palmer,
 Dora E. Pitcher,
 Catharine E. Bigelow, *Sewing Teacher*

PRIMARY SCHOOLS.

Somerset street.

C. Eliza Wason.
 Mabel West.

Sub-Committee, Mr. Beckley.
 " Mr. Fabyan.

Old Phillips School-house.

Sarah F. Russell.
 Elizabeth R. Preston.

Sub-Committee, Mr. Williamson.
 " Mr. Reed.
 " _____.

Joy street.

Mary E. Ames, *Special Instruction*. *Sub-Committee*, Mr. Dunn.

Blossom street.

Olive Ruggles.
 Julia T. Jellison.
 Annie M. Heustis.
 Lydia A. Isbell,

Sub-Committee, Mr. Wentworth.
 " Mr. Palmer.
 " Mr. Quinn.
 " Mr. Williamson.

BRIMMER SCHOOL DISTRICT.

COMMITTEE.

J. Coffin Jones Brown, <i>Chairman.</i>	Charles J. Prescott, <i>Secretary.</i>
Charles Hutchins,	George L. Chaney,
William Woods,	George L. Filkins,
Joseph Willard,	John J. Murphy,
Henry P. Shattuck,	Francis Hayden.
Samuel B. Cruft,	

BRIMMER SCHOOL.

Common street.

Joshua Bates, <i>Master.</i>	E. Bentley Young, <i>Sub-Master.</i>
T. H. Wason, <i>Usher.</i>	Rebecca L. Duncan, <i>Master's Assistant.</i>
Luthera W. Bird, <i>Head Assistant.</i>	

ASSISTANTS.

Kate C. Martin,	Mercy T. Snow,
Annie P. James,	Amanda Snow,
Caroline J. Spaulding,	Mercie A. Davie,
Sarah J. March,	Helen L. Bodge,

PRIMARY SCHOOLS.

Starr King School, Tennyson street.

Emma F. Burrill,	<i>Sub-Committee,</i> Mr. Woods.
Annie E. English,	" Mr. Murphy.
Sarah Farley.	" Mr. Filkins.
H. Ellen Boothby.	" Mr. Prescott.
Malvina R. Brigham.	" Mr. Chaney.

Brimmer School-house.

Eliza E. Foster.	<i>Sub-Committee,</i> Mr. Shattuck.
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Skinner School, corner Fayette and Church streets.

Frances B. Dewey.	<i>Sub-Committee,</i> Mr. Woods.
Eliza F. Moriarty.	" Mr. Willard.
Deborah K. Burgess.	" Mr. Cruft.
Sarah R. Bowles.	" Mr. Hayden.

CHAPMAN SCHOOL DISTRICT.

COMMITTEE.

Willard S. Allen, <i>Chairman.</i>	Edward H. Dunn, <i>Secretary.</i>
George H. Plummer,	Reuben Peterson, Jr.,
John Noble,	Benjamin F. Campbell.
Henry S. Washburn,	

CHAPMAN SCHOOL.

Eutaw street, East Boston.

George R. Marble, <i>Master.</i>	Orlando W. Dimick, <i>Sub-Master.</i>
Mary E. Allen, <i>Master's Head Assist-</i>	Sara F. Tenney, <i>Head Assistant.</i>
<i>ant.</i>	Jane F. Reid, <i>Head Assistant.</i>
	Maria D. Kimball, <i>Head Assistant.</i>

ASSISTANTS.

Sarah T. Synett,	Harriet E. Morrill,
Judith F. Meader,	Elizabeth M. Gregory,
Lucy E. Woodwell,	Mary E. Buffum.

Tappan Primary Building, Lexington street.

Annie J. Noble, <i>Sewing Teacher.</i>	John Sellers, <i>Janitor.</i>
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PRIMARY SCHOOLS.

Webb School, Porter street.

Mary A. Shaw,	Abby D. Beal,
Caroline S. Litchfield.	<i>Sub-Committee,</i> Mr. Campbell.
Ada D. Prescott.	" Mr. Allen.
Helen T. Higgins.	" Mr. Noble.
Mary E. Reid.	" Mr. Allen.

Tappan School, Lexington street.

Harriet C. Bates.	<i>Sub-Committee,</i> Mr. Campbell.
Mary C. Hall.	" Mr. Allen.
Marietta Duncan.	" Mr. Campbell.
Clara A. Otis.	" Mr. Noble.
Hannah F. Crafts.	" Mr. Allen.

COMINS SCHOOL DISTRICT.

COMMITTEE.

Franklin Williams, <i>Chairman.</i>	Charles K. Dillaway, <i>Secretary.</i>
Joel Seaverns,	Joseph O'Kane,
James Morse,	John D. Carty,
James Waldock,	C. Edwin Miles,
George F. Emery,	George M. Hobbs.
Albert E. Dunning,	

COMINS SCHOOL.

Tremont street, corner of Gore avenue.

Daniel W. Jones, <i>Master.</i>	Alfred Bunker, <i>Sub-Master.</i>
Julia Scribner, <i>Master's Assistant.</i>	Lydia E. Davis, <i>Master's Assistant.</i>
Almira W. Chamberline, <i>Head Assistant.</i>	Eliza C. Fisher, <i>Head Assistant.</i>
	Florence E. Tilton, <i>Head Assistant.</i>

ASSISTANTS.

Martha A. Cummings,	Charlotte P. Williams,
Adelina May,	Delia M. Upham,
Julia A. C. Gray,	E. Josephine Page,
Emma E. Towle,	Emily Swain,
Kate M. Murphy, ‡	Penelope G. Hayes,
Annie L. Hudson,	Delia M. Mansfield, <i>Sewing Teacher.</i>
	Geo. S. Hutchinson, <i>Janitor.</i>

PRIMARY SCHOOLS.

Heath street.

Jeannie B. Lawrence,	Mary A. Cloney.
	<i>Sub-Committee, Mr. Dillaway.</i>

Bromley Park.

Ellen H. Holt,	Emma M. Waldock,
Helen O. Wyman.	<i>Sub-Committee, Mr. Hobbs.</i>

Francis street.

Caroline A. Gragg.	<i>Sub-Committee, Mr. Williams.</i>
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Phillips street.

Annie E. Clark,	M. Louise Cummings.
	<i>Sub-Committee, Mr. Waldock.</i>

Sarah E. Haskins.	<i>Sub-Committee</i> , Mr. Carty.
Amelia F. Boston.	" Mr. Morse.
Mrs. J. P. Hall.	" Mr. Carty.
Sarah B. Bancroft.	" Mr. O'Kane.
Caroline M. Brackett.	" Mr. Emery.
Elizabeth A. Colligan.	" Mr. Morse.

Ward-house.

Elizabeth Lovell.	<i>Sub-Committee</i> , Mr. O'Kane.
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Cottage place.

Elizabeth F. Johnson,	Adaline Beal.
	<i>Sub-Committee</i> , Mr. Miles.
Caroline D. Putnam,	Caroline J. Harris.
	<i>Sub-Committee</i> , Mr. Dunning.
Mary J. Backup.	<i>Sub-Committee</i> , Mr. Seaverns.

DEARBORN SCHOOL DISTRICT.

COMMITTEE.

James Morse, <i>Chairman</i> .	Edward G. Morse, <i>Secretary</i> .
Ira Allen.	Joel Seaverns.
John O. Means.	John D. Carty.
Joseph A. Tucker.	Franklin Williams.
George F. Emery.	John Kneeland.
George H. Lloyd.	

DEARBORN SCHOOL.

Dearborn place.

William H. Long, <i>Master</i> .	Harlan P. Gage, <i>Sub-Master</i> .
L. Anna Dudley <i>Master's Assistant</i> .	Philena W. Rounseville, <i>Head Assist-</i>
Martha D. Chapman, <i>Head Assistant. ant.</i>	
Evelyn L. Holbrook, <i>Head Assistant</i> .	

ASSISTANTS.

Cynthia G. Melvin,	Frances L. Breeden,
Sarah H. Hosmer,	Clara T. Fisher,
Annie M. Backup,	Bell J. Dunham

Elizabeth M. Wood,	Elizabeth R. Wallis,
Phebe H. Simpson,	Mary F. Walsh,
Mary E. McCarty,	Josephine A. Keniston,
Catharine G. Hosmer, <i>Sewing Teacher.</i>	Michael J. Lalley, <i>Janitor.</i>

PRIMARY SCHOOLS.

Eustis street.

Mary F. Neale,	Abby L. Baker.
	<i>Sub-Committee, Mr. J. Morse.</i>
Clarabel E. Chapman,	Kate M. Wallace.
	<i>Sub-Committee, Mr. Lloyd.</i>

George street.

Mary M. Sherwin,	Mary C. Smith.
	<i>Sub-Committee, Mr. E. G. Morse.</i>
Emily M. Pevear,	Flora J. Cutter.
	<i>Sub-Committee, Mr. Means.</i>
Clara F. Conant,	M. Ella Aldrich.
	<i>Sub-Committee, Mr. Carty.</i>

Yeoman street.

Anna M. Balch,	Susan F. Rowe.
	<i>Sub-Committee, Mr. Allen.</i>
Ellen M. Oliver,	Mary E. Nason.
	<i>Sub-Committee, Mr. Kneeland.</i>
Ada L. McKean,	Annie M. Croft.
	<i>Sub-Committee, Mr. Williams.</i>
Louise D. Gage,	Kate A. Nason.
	<i>Sub-Committee, Mr. Seaverns.</i>

DORCHESTER-EVERETT SCHOOL DISTRICT.

COMMITTEE.

Frederick P. Moseley, <i>Chairman.</i>	James S. Greene,
Joseph Willard,	William P. Leavitt.
Nath'l B. Shurtleff,	

DORCHESTER-EVERETT SCHOOL.

Sumner street, Dorchester.

Roland F. Alger, <i>Master.</i>	Mary F. Thompson, <i>Master's Assistant.</i>
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ASSISTANTS.

Helen M. Hills,
Sara M. Bearse,

Anna M. Foster,
M. Rosalia Merrill,
Henrietta A. Hill.

PRIMARY SCHOOLS.

Boston street.

Cora L. Etheridge,

Annie W. Ford.
Sub-Committee, Mr. Moseley

Everett avenue.

Marion W. Brooks,

Matilda Mitchell.
Sub-Committee, Mr. Moseley.

DWIGHT SCHOOL DISTRICT.

COMMITTEE.

William H. Learnard, Jr.,	<i>Chairman</i> .	Stephen G. Deblois,	<i>Secretary</i>
William B. Merrill,		Samuel B. Cruft,	
Lyman Mason,		George L. Chaney,	
William H. Baldwin,		Joseph H. Gray,	
John W. Porter,		Edward W. Kinsley.	

DWIGHT SCHOOL.

West Springfield street.

James A. Page	<i>Master</i> .	Walter S. Parker,	<i>Sub-Master</i> .
Henry L. Sawyer,	<i>Usher</i> .	Ruth G. Rich,	<i>Master's Assistant</i> .
		Margaret P. Kelley,	<i>Head Assistant</i> .

ASSISTANTS.

Mary C. R. Towle,
Emily F. Carpenter,
Amelia M. Hinckley,
Sarah C. Fales,

Laura A. Pendleton,
Caroline E. Jones,
Mary E. Trow,

PRIMARY SCHOOLS.

Rutland street.

Augusta A. Davis,	<i>Sub-Committee</i> , Mr. Baldwin.
Martha B. Lucas.	" Mr. Gray.
Sarah E. Crocker.	" Mr. Deblois.
Henrietta Draper.	" Mr. Kinsley.
Clara B. Gould,	" Mr. Chaney.
Anna Severance.	" Mr. Cruft.

ELIOT SCHOOL DISTRICT.

COMMITTEE.

George D. Ricker, <i>Chairman</i> .	William J. Porter, <i>Secretary</i> .
James M. Badger,	Nath'l B. Shurtleff,
Lucius Slade,	Michael Moran,
John W. Fraser,	Orran G. Cilley.
James A. McDonough,	

ELIOT SCHOOL.

North Bennet street.

Samuel W. Mason, <i>Master</i> .	Walter H. Newell, <i>Sub-Master</i> .
Granville S. Webster, <i>Usher</i> .	Frances M. Bodge, <i>Master's Assistant</i> .
Adolin M. Steele, <i>Head Assistant</i> .	

ASSISTANTS.

Elizabeth M. Turner,	O. Augusta Welch,
Kate L. Dodge,	Mary Heaton,
M. Ella Wilkins,	Clara Winning,
Clara A. Newell,	Emily F. Marshall,
Mary E. Hanney,	Frances Giles,
	Hannah M. Seavey.

PRIMARY SCHOOLS.

Snelling place.

Harriet S. Boody.	<i>Sub-Committee</i> , Mr. Ricker.
Mary A. J. Robinson.	" Mr. Shurtleff.
Cleone G. Tewksbury.	" Mr. Badger.
Harriet E. Lampee.	" Mr. McDonough.
Rosa M. E. Reggio.	" Mr. Mahan.
Sarah A. Winsor.	" Mr. Fraser.

Charter street.

Ellen Fitzgerald.	<i>Sub-Committee,</i>	Mr. Fraser.
J. Ida Monroe,	"	Mr. Badger.
Juliaette Davis.	"	Mr. Cilley.
Sarah Ripley.	"	Mr. Slade.
Julia A. Cutts.	"	Mr. Ricker.
Eliza Brintnall.	"	Mr. Porter.

North Bennet street.

Ann A. Coleman.	<i>Sub-Committee,</i>	Mr. Mahan.
Mary E. Barrett, <i>Special Instruction.</i>	"	Mr. Moran.
Kate S. Sawyer, " "	"	Mr. Porter.
Adelaide E. Badger, " "	"	Mr. Ricker.

EVERETT SCHOOL DISTRICT.

COMMITTEE.

William B. Merrill, <i>Chairman.</i>	Stephen G. Deblois, <i>Secretary.</i>
Wm. H. Learnard, Jr.,	Lyman Mason,
William H. Baldwin,	Samuel B. Cruft,
Edward W. Kinsley,	Wm. Burnet Wright.

EVERETT SCHOOL.

West Northampton street.

George B. Hyde, <i>Master.</i>	Margaret E. Johnson, <i>Master's Assistant.</i>
S. Flora Chandler, <i>Head Assistant.</i>	Anna C. Ellis, <i>Head Assistant.</i>
Janet M. Bullard, <i>Head Assistant.</i>	

ASSISTANTS.

Maria S. Whitney,	Susan S. Foster,
Mary A. Gavett,	Abby C. Haslet,
Ann R. Gavett,	Eva M. Keller,
Louisa M. Alline,	Clara Nelson,
E. L. P. Shannon,	Almira S. Johnson.
Martha A. Sargent, <i>Sewing Teacher.</i>	Edward Bannon, <i>Janitor.</i>

PRIMARY SCHOOLS.

West Concord street.

Eliza C. Gould.	<i>Sub-Committee,</i> Mr. Deblois.
Mary H. Downe.	“ Mr. Mason.
Mary A. Crocker.	“ Mr. Merrill.
Alice E. Shedd.	“ Mr. Baldwin.
Caroline S. Lamb.	“ Mr. Learnard.
Lydia A. Sawyer.	“ Mr. Wright.
Clementine D. Grover.	“ Mr. Kinsley.
Hannah M. Coolidge.	“ Mr. Cruft.
Adelaide B. Smith.	“ Mr. Cruft.
Emma Halstrick.	“ Mr. Deblois.
Lydia F. Blanchard.	“ Mr. Kinsley.
Fannie M. Nason.	“ Mr. Learnard.

FRANKLIN SCHOOL DISTRICT.

COMMITTEE.

Francis D. Stedman, <i>Chairman.</i>	William H. Baldwin, <i>Secretary.</i>
Wm. H. Learnard, Jr.,	Charles Hutchins,
Charles L. Flint,	Stephen G. Deblois,
John H. McKendry,	Geo. F. Bigelow,
Joseph H. Gray,	Wm. Burnet Wright.

FRANKLIN SCHOOL.

Ringgold street.

Granville B. Putnam, <i>Master.</i>	Jennie S. Tower, <i>Master's Assistant.</i>
Isabella M. Harmon, <i>Head Assistant.</i>	Caroline A. Mason, <i>Head Assistant.</i>
Catharine T. Simonds, <i>Head Assistant.</i>	

ASSISTANTS.

Mary L. Masters,	Elizabeth J. Brown,
Martha J. Burge,	Sarah D. Hamblin,
Margaret E. Schouler,	P. Catharine Bradford,
Roxanna W. Longley,	Kate E. Blanchard,
Mary A. Mitchell,	Annie E. Parker.
Elizabeth D. Cutter, <i>Sewing Teacher.</i>	

PRIMARY SCHOOLS.

Groton street.

Helen M. Faxon.	<i>Sub-Committee,</i> Mr. Hutchins.
Georgiana E. Abbott.	“ Mr. Stedman.
Margaret J. Crosby.	“ Mr. Deblois.
Elizabeth G. Forbush.	“ Mr. Learnard.
Lucy A. Cate.	“ Mr. Read.
Isadora Page.	“ Mr. Gray.

GASTON SCHOOL DISTRICT.

COMMITTEE.

Francis H. Underwood, <i>Chairman.</i>	Edward C. Leonard, <i>Secretary.</i>
George A. Thayer,	Joseph H. Allen,
John S. H. Fogg,	Richard J. Fennelly,
Warren P. Adams,	Arthur H. Wilson.

GASTON SCHOOL.

L street, corner of Sixth.

C. Goodwin Clark, <i>Master.</i>	Clara S. Nye, <i>Master's Assistant.</i>
Lydia Curtis, <i>Head Assistant.</i>	

ASSISTANTS.

Harriet E. Marcy,	Sarah C. Winn,
Myra S. Butterfield,	——— ———,
Susan Carty,	Ellen R. Wyman,
Margaret Reid, <i>Sewing Teacher.</i>	S. W. Pollard, <i>Janitor.</i>

PRIMARY SCHOOLS.

City Point, Fourth street.

Elizabeth M. Easton,	Fannie Blanchard,
Mary A. Crosby,	Josephine F. Krogman,
Mary Cutler,	Matilda Stephens.
<i>Sub-Committee, Messrs. Wilson, Thayer and Underwood.</i>	

GIBSON SCHOOL DISTRICT.

COMMITTEE.

N. B. Shurtleff, <i>Chairman.</i>	Frederick P. Moseley,
James S. Greene,	Joseph Willard,
	William P. Leavitt.

GIBSON SCHOOL.

School street, Dorchester.

William E. Endicott, <i>Master.</i>	Ida L. Boyden, <i>Head Assistant.</i>
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ASSISTANTS.

Elizabeth E. Shove,	Nellie G. Sanford,
	Charlotte E. Baldwin.

ATHERTON.

*Columbia street.*Ella S. Wales, *Head Assistant.*

PRIMARY SCHOOLS.

School street, Dorchester.

E. Louise Brown,	Ella Whittredge.
	<i>Sub-Committee, Mr. Shurtleff.</i>

Green street.

Edna L. Gleason.	<i>Sub-Committee, Mr. Shurtleff.</i>
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HANCOCK SCHOOL DISTRICT.

COMMITTEE.

Lucius Slade, <i>Chairman.</i>	James A. McDonough, <i>Secretary.</i>
Geo. D. Ricker,	Michael Moran,
James M. Badger,	Edward H. Dunn,
John W. Fraser,	John T. Beckley,
Wm. J. Porter,	Charles C. Perkins.

HANCOCK SCHOOL.

Parmenter street.

James W. Webster, *Master.* Ellen C. Sawtelle, *Master's Assistant.*
 Amy E. Bradford, *Head Assistant.* Ellen A. Hunt, *Head Assistant.*
 Martha F. Winning, *Head Assistant.*

ASSISTANTS.

Ellen F. Sanders,	Helen M. Hitchings,
Josephine M. Robertson,	Susan E. Allen,
Clara E. Bell,	Mary E. Skinner,
Mary E. F. McNeil,	Sophia L. Sherman,
Anna N. Jacobs,	Franklin Evelyth, <i>Janitor.</i>

*Cushman Building, Parmenter street.*Marie L. Macomber, *Head Assistant.*

ASSISTANTS.

Achsah Barnes,	Olive M. E. Rowe,
Annie E. Caldwell,	Kate Doherty, <i>Sewing Teacher.</i>
	Enoch Miley, <i>Janitor.</i>

PRIMARY SCHOOLS.

Cushman School, Parmenter street.

Sarah E. Ward. *	<i>Sub-Committee,</i> Mr. Perkins.
Adeline S. Bodge.	" Mr. McDonough.
Harriet M. Fraser.	" Mr. Fraser.
Augusta H. Barrett.	" Mr. Badger.
Rosanna B. Raycroft.	" Mr. Beckley.
Mary L. Desmond.	" Mr. Porter.
Mary J. Clark.	" Mr. Dunn.
Marcella C. Halliday.	" Mr. Moran.
Sarah F. Ellis, <i>Special Instruction.</i>	" Mr. Dunn.
Elizabeth A. Fisk, " "	" Mr. Slade.
Maria A. Gibbs, " "	" Mr. Moran.

Ingraham School, Sheafe street.

Josephine B. Silver.	<i>Sub-Committee,</i> Mr. Mahan.
Martha F. Boody.	" Mr. Mahan.
Esther W. Mansfield.	" Mr. Ricker.

Thacher street.

Mary Bonnie.	<i>Sub-Committee</i> , Mr. Badger.
Sarah J. Copp.	“ Mr. Fraser.
Lucy C. Flynn.	“ Mr. Ricker.

Cooper street.

Kate T. Sinnott.	<i>Sub-Committee</i> , Mr. Porter.
Teresa M. Gargan.	“ Mr. McDonough.

HARRIS SCHOOL DISTRICT.

COMMITTEE.

William T. Adams, <i>Chairman</i> .	John W. Porter, <i>Secretary</i> .
John H. McKendry,	John C. J. Brown.
Willard S. Allen,	

HARRIS SCHOOL.

Corner of Adams and Mill streets, Dorchester.

Edwin T. Horne, <i>Master</i> .	Ann Tolman, <i>Head Assistant</i> .
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ASSISTANTS.

J. Annie Bense,	Elizabeth P. Boynton,
Sarah E. Hersey,	Mary C. Edes,
Mrs. A. S. Ryder,	<i>Sewing Teacher</i> .

PRIMARY SCHOOLS.

Harris School-house.

Marion B. Sherburne.	
	<i>Sub-Committee</i> , Messrs. Porter and Brown.
Anne M. Gilbert.	
	<i>Sub-Committee</i> , Messrs. McKendry and Allen.
Elizabeth F. Pearson.	<i>Sub-Committee</i> , Mr. Adams.

LAWRENCE SCHOOL DISTRICT.

COMMITTEE.

Hugh J. Toland, <i>Chairman.</i>	Richard J. Fennelly, <i>Secretary.</i>
Warren P. Adams,	George A. Thayer,
Christopher A. Connor,	Edward C. Leonard,
John S. H. Fogg,	Joseph D. Fallon.
John E. Fitzgerald,	

LAWRENCE SCHOOL.

Corner of B and West Third streets.

Amos M. Leonard, <i>Master.</i>	D. A. Hamlin, <i>Sub-Master.</i>
Henry L. Clapp, <i>Usher.</i>	Grenville C. Emery, <i>Usher.</i>
Alice Cooper, <i>Master's Assistant.</i>	Emma P. Hall, <i>Head Assistant.</i>

ASSISTANTS.

Mary E. H. Ottiwell,	Martha S. Damon,
Abby C. Burge,	Margaret Holmes,
Margaret A. Gleason,	Margarette A. Moody,
Catharine M. Lynch,	Mary A. Conroy,
Mary W. Bragdon,	Mary E. Stubbs,
Lena Hurlbutt,	M. Louise Gillett.

PRIMARY SCHOOLS.

Mather Building, Broadway, near B street.

Mary A. Montague.	<i>Sub-Committee,</i>	Mr. Adams.
Lucy M. Cragin.	"	Mr. Thayer.
Anna M. Elwell.	"	Mr. Connor.
Ada A. Braden.	"	Mr. Fennelly.
Willietta Bicknell.	"	Mr. Leonard.
Alice W. Baker.	"	Mr. Toland.
Ann E. Newell, <i>Special Instruction.</i>	"	Mr. Fallon.
Ophelia S. Newell, " " "	"	Mr. Fitzgerald.
Sarah M. Brown, " " "	"	Mr. Connor.

Jenkins Block, corner of Broadway and B street.

A. Elizabeth McGrath.	<i>Sub-Committee,</i>	Mr. Toland.
— — — — —	"	Mr. Fennelly.

Corner Broadway and Dorchester avenue.

Elizabeth S. Lakeman.	<i>Sub-Committee,</i>	Mr. Adams.
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Parkman School, Silver street, near Dorchester avenue.

Amelia McKenzie.	<i>Sub-Committee,</i> Mr. Fallon.
Mary G. A. Toland.	“ Mr. Connor.
Harriet L. Rayne.	“ Mr. Toland.
Isabel M. Kelren.	“ Mr. Fitzgerald.
Mary F. Peeler.	“ Mr. Leonard.
Emma F. Gallagher.	“ Mr. Thayer.

LEWIS SCHOOL DISTRICT.

COMMITTEE.

Joel Seaverns, <i>Chairman.</i>	Edward G. Morse, <i>Secretary.</i>
Joseph A. Tucker,	Joseph O'Kane,
Chas. K. Dillaway,	John Kneeland,
George H. Lloyd,	C. Edwin Miles,
Fred'k P. Moseley,	_____.

LEWIS SCHOOL.

Corner Dale and Sherman streets.

Wm. L. P. Boardman, <i>Master.</i>	Charles F. King, <i>Sub-Master.</i>
Sarah E. Fisher, <i>Master's Assistant.</i>	Elizabeth S. Morse, <i>Head Assistant.</i>
Eunice C. Atwood, <i>Head Assistant.</i>	

ASSISTANTS.

Annie E. Boynton,	Mary D. Chamberlain,
Susan A. Dutton,	Emily B. Eliot,
Elizabeth Gerry,	Mary E. Glidden,
Louisa J. Hovey,	Maria L. Miller,
Henrietta M. Young,	Malvina L. Sears, <i>Sewing Teacher.</i>
Gilbert S. May, <i>Janitor.</i>	

PRIMARY SCHOOLS.

Thornton street.

Joanna Monroe.	<i>Sub-Committee,</i> Mr. Dillaway.
Alice C. Pierce.	“ Mr. O'Kane.

Winthrop street.

Frances N. Brooks.	<i>Sub-Committee,</i>	Mr. Kneeland.
Eliza J. Goss.	"	Mr. Morse.
Helen Crombie.	"	_____
Caroline Eliot.	"	Mr. Miles.

Monroe street.

A. B. Russell.	<i>Sub-Committee,</i>	Mr. Morse.
Maria L. Burrell.	"	Mr. Lloyd.

Mt. Pleasant avenue.

Fanny H. C. Bradley.	<i>Sub-Committee,</i>	Mr. Tucker.
Eloise B. Walcott.	"	_____

Shawmut and Codman avenues.

Alice M. May.	<i>Sub-Committee,</i>	_____
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LINCOLN SCHOOL DISTRICT.

COMMITTEE.

George A. Thayer, <i>Chairman.</i>	Edward C. Leonard, <i>Secretary.</i>
Francis H. Underwood,	Richard J. Fennelly,
John S. H. Fogg,	Joseph H. Allen,
Warren P. Adams,	Arthur H. Wilson.

LINCOLN SCHOOL.

Broadway, near K street.

Alanzo G. Ham, <i>Master.</i>	Henry H. Kimball, <i>Sub-Master.</i>
Frank A. Morse, <i>Usher.</i>	Mary E. Balch, <i>Head Assistant.</i>
Margaret J. Stewart, <i>Head Assistant.</i>	

ASSISTANTS.

Martha B. Dinsmore,	Sarah M. Tripp,
Sarah A. Curran,	_____
Vodisa J. Comey,	Helen E. Head.

PRIMARY SCHOOLS.

Capen School, corner of I and Sixth streets.

Laura J. Gerry,	Mary E. Powell,
Susan Hutchinson,	Mary E. Perkins,
Ella M. Warner,	_____.
Mary H. Faxon, <i>Special Instruction.</i>	
<i>Sub-Committee, Messrs. Thayer, Underwood and Wilson.</i>	

LYMAN SCHOOL DISTRICT.

COMMITTEE.

Henry S. Washburn, <i>Chairman.</i>	John Noble, <i>Secretary.</i>
Reuben Peterson, Jr.,	Benj. F. Campbell,
Willard S. Allen,	George D. Ricker.
George H. Plummer,	

LYMAN SCHOOL.

Corner of Paris and Decatur streets.

Hosea H. Lincoln, <i>Master.</i>	George K. Daniell, Jr., <i>Sub-Master.</i>
Cordelia Lothrop, <i>Master's Assistant.</i>	Eliza F. Russell, <i>Head Assistant.</i>
Mary A. Turner, <i>Head Assistant.</i>	

ASSISTANTS.

Amelia H. Pittman,	Lucy J. Lothrop,
Mary P. E. Tewksbury,	Harriet N. Webster,
Susan J. Adams,	Emma P. Morey,
Clara M. Hovey,	Louise A. Small,
Sibylla A. Bailey,	Frances C. Close, <i>Sewing Teacher.</i>
William Gradon, <i>Janitor.</i>	

PRIMARY SCHOOLS.

Paris street.

Elizabeth A. Turner.	_____.
Angeline M. Cudworth.	<i>Sub-Committee, Mr. Noble.</i>
Sarah F. Lothrop,	Anna I. Duncan,
Harriet N. Tyler.	<i>Sub-Committee, Mr. Ricker.</i>

Old Lyman School-house.

Frances I. Dayley.

*Sub-Committee, Mr. Ricker.**Webster street.*Mary E. Morse, *Special Instruction.**Sub-Committee, Mr. Washburn.*

MATHER SCHOOL DISTRICT.

COMMITTEE.

William P. Leavitt, *Chairman.*Nathaniel B. Shurtleff, *Secretary.*

Frederick P. Moseley,

Joseph Willard.

James S. Greene,

MATHER SCHOOL.

*Meeting-House Hill, Dorchester.*Daniel B. Hubbard, *Master.*Sarah W. Symmes, *Head Assistant.*

ASSISTANTS.

Mary C. Jacobs,

Lucy J. Dunnels,

Annie L. Jenkins,

S. Kate Shepard,

Sarah E. Austin,

Ellen H. Bailey.

PRIMARY SCHOOLS.

Meeting-House Hill.

Ella L. Howe,

M. Esther Drake,

Mary P. Pronk,

Mrs. A. S. Rider, *Sewing Teacher.*B. C. Bird, *Janitor.*

MAYHEW SCHOOL DISTRICT.

COMMITTEE.

Samuel H. Wentworth, *Chairman.*A. K. Tilden, *Secretary.*

Lucius Slade,

John T. Beckley,

William J. Porter,

Orran G. Cilley,

Ezra Palmer,

Adino B. Hall.

Edward B. Rankin,

MAYHEW SCHOOL.

Hawkins street.

Samuel Swan, <i>Master.</i>	Quincy E. Dickerman, <i>Sub-Master.</i>
George W. M. Hall, <i>Usher.</i>	Emily A. Moulton, <i>Master's Assistant.</i>
Adeline F. Cutter, <i>Head Assistant.</i>	

ASSISTANTS.

Luciette A. Wentworth,	Sarah W. I. Copeland,
Alicia O. Quimby,	Elizabeth L. West,
Helen M. Coolidge,	Ruth E. Rowe.

PRIMARY SCHOOLS.

Grant place.

Elizabeth S. Parker, <i>Special Instruction.</i>	<i>Sub-Committee,</i>	Mr. Tilden.
Affie T. Wier,	" "	Mr. Mahan.
Emeline C. Farley,	"	Mr. Beckley.
Ann M. F. Sprague.	"	Mr. Cilley.
Fanny B. Bowers.	"	Mr. Palmer.

Cooper street.

Harriet A. Farrow.	<i>Sub-Committee,</i>	Mr. Rankin.
Susan A. Slavin.	"	Mr. Porter.

MINOT SCHOOL DISTRICT.

COMMITTEE.

John W. Porter, <i>Chairman.</i>	Wm. T. Adams, <i>Secretary.</i>
John H. McKendry,	John C. J. Brown.
Willard S. Allen,	

MINOT SCHOOL.

Walnut street, Dorchester.

Joseph T. Ward, Jr., <i>Master.</i>	I. F. P. Emery, <i>Head Assistant.</i>
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ASSISTANTS.

K. M. Adams,	A. E. Fisher,	E. M. S. Treadwell.
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PRIMARY SCHOOLS.

Walnut street.

Angelina A. Brigham.	<i>Sub-Committee</i> , Mr. Brown.
Frances E. Hildreth.	" Mr. Allen.
Jane M. Seaverns.	" Mr. Adams.

Adams street.

Mary J. Pope.	<i>Sub-Committee</i> , Mr. Porter.
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NORCROSS SCHOOL DISTRICT.

COMMITTEE.

Joseph D. Fallon, <i>Chairman</i> .	Richard J. Fennelly, <i>Secretary</i> .
John S. H. Fogg,	Arthur H. Wilson,
John E. Fitzgerald,	Warren P. Adams,
Hugh J. Toland,	George A. Thayer,
Francis H. Underwood,	C. A. Connor.

NORCROSS SCHOOL.

D street, corner of Fifth street, South Boston.

Josiah A. Stearns, <i>Master</i> .	Mary J. Fennelly, <i>Master's Assistant</i> .
Fiducia S. Wells, <i>Head Assistant</i> .	Amanda Marble, <i>Head Assistant</i> .

ASSISTANTS.

Sarah A. Gallagher,	Mary A. Neill,
Mary E. Downing,	Anne M. Prescott,
May Dawson,	Juliette Wyman,
Miranda A. Bolkcom,	Juliette Smith,
Harriet E. Johnson,	Emma L. Eaton,
Mary G. Lanning,	Sarah J. Bliss, <i>Sewing Teacher</i> .
Samuel T. Jeffers, <i>Janitor</i> .	

PRIMARY SCHOOLS.

Drake School, C, corner of Third street.

Mary K. Davis.	<i>Sub-Committee</i> , Mr. Underwood.
Sarah V. Cunningham.	" Mr. Fennelly.
Abby C. Nickerson.	" Mr. Fogg.
Nelly J. Cashman.	" Mr. Fitzgerald.
Frances W. Hussey.	" Mr. Adams.
Lucinda Smith.	" Mr. Connor.

Vestry, corner of D and Silver streets.

Mary R. Roberts, *Special.*

Sub-Committee, Mr. Fallon.

PHILLIPS SCHOOL DISTRICT.

COMMITTEE.

James Reed, *Chairman.*

A. K. Tilden, *Secretary.*

S. K. Lothrop,

Adino B. Hall,

Hall Curtis,

Joseph Willard,

N. B. Shurtleff,

John E. Quinn,

John T. Beckley,

Edward H. Dunn.

PHILLIPS SCHOOL.

Phillips street.

James Hovey *Master.*

Elias H. Marston, *Sub-Master.*

George Perkins, *Usher.*

Laura M. Porter, *Master's Assistant.*

Carrie T. Haven, *Head Assistant.*

ASSISTANTS.

Elvira M. Harrington,

Hannah M. Sutton,

Martha A. Knowles,

Martha F. Whitman,

Victoria M. Goss,

Clara J. Reynolds,

Eliza A. Corthell,

Sarah E. Frye.

PRIMARY SCHOOLS.

Phillips street.

Elizabeth W. Nickerson.

Sub-Committee, Mr. Dunn.

Sarah A. M. Turner.

“ Mr. Curtis.

Mary E. Franklin.

“ Mr. Quinn.

Anderson street.

Barbara C. Farrington.

Sub-Committee, Mr. Beckley.

Josephine O. Hedrick.

“ ———

Joy street.

Elizabeth N. Smith, *Special Instruction.*

Sub-Committee, Mr. Willard.

Phillips School-house.

Elevyn Plummer, *Special Instruction.*

Sub-Committee, Mr. Tilden.

PRESCOTT SCHOOL DISTRICT.

COMMITTEE.

Reuben Peterson, Jr., <i>Chairman.</i>	John W. Fraser, <i>Secretary.</i>
Henry S. Washburn,	George H. Plummer,
Willard S. Allen,	Benjamin F. Campbell.
John Noble,	

PRESCOTT SCHOOL.

Prescott street, East Boston.

Jas. F. Blackinton, <i>Master.</i>	L. Henry Dutton, <i>Sub-Master.</i>
Elizabeth R. Drowne, <i>Master's Assistant.</i>	Bernice A. DeMerritt, <i>Head Assistant.</i>
Louise S. Hotchkiss, <i>Head Assistant.</i>	Frances H. Turner, <i>Head Assistant.</i>

ASSISTANTS.

Mary A. Ford,	Harriet N. Weed,
Ellenette Pillsbury,	Sarah J. Litchfield,
Mary D. Day,	Annie G. De Silva,
Mary M. Foster,	G. H. Tilden,
Annie J. Noble, <i>Sewing Teacher.</i>	Edward C. Chessman, <i>Janitor.</i>

PRIMARY SCHOOLS.

Prescott School-house.

Hannah L. Manson,	Almaretta J. Critchett.
Emma C. Reed.	<i>Sub-Committee, Mr. Peterson.</i>

Rice Building, Saratoga street.

Margaret A. Bartlett,	Caroline Ditson,
Florence H. Drew.	<i>Sub-Committee, Mr. Fraser.</i>

Saratoga street.

Abby M. Nye.	<i>Sub-Committee, Mr. Allen.</i>
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Bennington-street Chapel.

Mary E. Plummer,	Harriet E. Litchfield.
	<i>Sub-Committee, Mr. Noble.</i>

Bennington street.

Elizabeth W. Hazell.	<i>Sub-Committee, Mr. Campbell.</i>
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QUINCY SCHOOL DISTRICT.

COMMITTEE.

John E. Fitzgerald, <i>Chairman.</i>	Edward B. Rankin, <i>Secretary.</i>
Henry P. Shattuck,	John J. Murphy,
William Woods,	Edward C. Leonard,
John P. Reynolds,	Henry J. Colman,
John P. Ordway,	David W. Foster,
John M. Maguire,	Francis Hayden.
George L. Chaney,	

QUINCY SCHOOL.

Tyler street.

E. Frank Wood, <i>Master.</i>	George W. Neal, <i>Sub-Master.</i>
———, <i>Usher.</i>	Annie M. Lund, <i>Master's Head Assistant.</i>
Olive M. Page, <i>Head Assistant.</i>	

ASSISTANTS.

Emily J. Tucker,	Nellie J. Frost,
Mary L. Holland,	Bridget A. Foley,
Charlotte L. Wheelwright,	Emily B. Peck,
Margaret F. Tappan.	

PRIMARY SCHOOLS.

Way street.

Mary E. Sawyer.	<i>Sub-Committee, Mr. Reynolds.</i>
Charlotte L. Young.	
	<i>Sub-Committee, Messrs. Foster and Chaney.</i>
Maria J. Mahoney.	<i>Sub-Committee, Mr. Ordway.</i>

Hudson street.

Susan H. Chaffee.	
	<i>Sub-Committee, Messrs. Fitzgerald and Rankin.</i>

Genesee street.

Emily E. Maynard.	
	<i>Sub-Committee, Messrs. Shattuck and Woods.</i>
Harriet M. Bolman.	
	<i>Sub-Committee, Messrs. Leonard and Colman.</i>
Anna T. Corliss.	
	<i>Sub-Committee, Messrs. Murphy and Maguire.</i>

RICE SCHOOL DISTRICT.

COMMITTEE.

Charles L. Flint, <i>Chairman</i> .	Charles J. Prescott, <i>Secretary</i> .
William B. Merrill,	George E. Filkins,
J. Coffin Jones Brown,	William H. Baldwin,
Charles Hutchins,	Francis D. Stedman,
Lyman Mason,	William Burnet Wright.
Geo. F. Bigelow,	

RICE SCHOOL.

Corner of Darmouth and Appleton streets.

Lucius A. Wheelock, <i>Master</i> .	Edward Southworth, <i>Sub-Master</i> .
Charles F. Kimball, <i>Usher</i> .	Martha E. Pritchard, <i>Master's Assistant</i> .

ASSISTANTS.

Elsie J. Parker,	Florence Marshall,
E. Maria Simonds,	Ella T. Gould,
J. Annie Bense,	Eliza Cox,
Harriet D. Hinckley,	Dora Brown,
Martha J. Porter,	Cynthia M. Beckler,
Elizabeth M. Burnham, <i>Special Instruction</i> .	

PRIMARY SCHOOLS.

Appleton street.

Ella F. Wyman.	<i>Sub-Committee</i> , Mr. Read.
-----	" Mr. Stedman.
Grace Hooper.	" Mr. Hutchins.
Sarah E. Bowers.	" Mr. Baldwin.
Ellen F. Beach.	" Mr. Mason.
Anna B. Badlam.	" Mr. Prescott.
Emma L. Wyman.	" Mr. Wright.

Shawmut avenue.

Josephine G. Whipple.	<i>Sub-Committee</i> , Mr. Read.
Georgiana A. Ballard.	" Mr. Filkins.
Frances M. Sylvester.	" Mr. Stedman.
C. Josephine Bates.	" Mr. Wright.
Julia Marshall.	" Mr. Prescott.
Jennie E. Haskell.	" Mr. Baldwin.
Martha L. Beckler, <i>Special Instruction</i> .	The whole Committee.

SHERWIN SCHOOL DISTRICT.

COMMITTEE.

Ira Allen, <i>Chairman.</i>	John D. Carty, <i>Secretary.</i>
John Kneeland,	George H. Lloyd,
John O. Means,	Albert E. Dunning,
Stephen G. Deblois,	Joseph O'Kane,
Joseph A. Tucker,	Charles K. Dillaway.
C. Edwin Miles,	

SHERWIN SCHOOL.

Madison square.

Silas C. Stone, <i>Master.</i>	S. Maria Wheeler, <i>Head Assistant.</i>
Julia F. Long, <i>Master's Assistant.</i>	Lucy L. Burgess, <i>Head Assistant.</i>
Charles W. Hill, <i>Sub-Master.</i>	Martha A. Smith, <i>Head Assistant.</i>

ASSISTANTS.

Elizabeth B. Walton,	Sarah R. Bonney,
Anna B. Carter,	Josephine D. Snow,
Harriet A. Lewis,	Marian Henshaw,
Fanny McDonald,	Caroline K. Nickerson,
E. Elizabeth Boies,	Isadora Bonney,
Fanny L. Stockman,	Alice T. Kelley, <i>Special.</i>
Louisa Ayer,	Emma L. Peterson,
Maria L. Young, <i>Sewing Teacher.</i>	Joseph G. Scott, <i>Janitor.</i>

PRIMARY SCHOOLS.

Weston street.

Anna G. Fillebrown,	Mary E. Gardner.
	<i>Sub-Committee, Mr. Carty.</i>
Annie E. Macdonald,	Martha E. Page.
	<i>Sub-Committee, Mr. Kneeland.</i>

Franklin place.

Annie E. Wallcut,	Sarah J. Davis.
	<i>Sub-Committee, Mr. Allen.</i>
Sarah L. Tewksbury,	Clara C. Walker.
	<i>Sub-Committee, Mr. Tucker.</i>

Avon place.

Abby E. Ford,

Elizabeth Todd.

*Sub-Committee, Mr. O'Kane.**Day's Chapel.*

Emily L. Marston.

*Sub-Committee, Mr. Lloyd.**Mill Dam.*

Annie H. Berry.

*Sub-Committee, Mr. Miles.**Cabot street.*

Mary F. Cogswell.

*Sub-Committee, Mr. Dillaway.**Warwick street.*

Elizabeth A. Sanborn.

Sub-Committee, Mr. Dillaway.

SHURTLEFF SCHOOL DISTRICT.

COMMITTEE.

John S. H. Fogg, *Chairman.*Christopher A. Connor, *Secretary.*

Joseph H. Allen,

Nath'l B. Shurtleff,

Francis H. Underwood,

Arthur H. Wilson,

Warren P. Adams,

Frederick P. Moseley,

George A. Thayer,

Joseph D. Fallon.

SHURTLEFF SCHOOL.

*Dorchester street.*Henry C. Hardon, *Master.*Anna M. Penniman, *Master's Assistant.*Ellen E. Morse, *Head Assistant.*Lavinia B. Pendleton, *Head Assistant.* Emeline L. Tolman, *Head Assistant.*

ASSISTANTS.

Martha E. Morse,

Abby S. Hammond,

Catharine A. Dwyer,

Margaret T. Pease,

Sarah L. Garrett,

Roxana N. Blanchard,

Harriet S. Howes,

Ella F. Blacker,

Julia M. Pease,

Edith A. Pope,

Eliza M. Cleary, *Sewing Teacher.*William Dillaway, *Janitor.*

PRIMARY SCHOOLS.

Clinch Building, F street.

Marion W. Rundlett.	<i>Sub-Committee,</i> Mr. Connor.
J. M. Bullard.	“ Mr. Allen.
Ella R. Johnson.	“ Mr. Adams.
Mary E. Morse.	“ Mr. Wilson.
Sophia C. Dudley.	“ Mr. Moseley.
Julia F. Baker.	“ Mr. Fallon.

STOUGHTON SCHOOL DISTRICT.

COMMITTEE.

James S. Greene, <i>Chairman.</i>	Willard S. Allen, <i>Secretary.</i>
John W. Porter,	John C. J. Brown.
John H. McKendry,	

STOUGHTON SCHOOL.

River street, Lower Mills.

Edward M. Lancaster, <i>Master.</i>	Elizabeth H. Page, <i>Head Assistant.</i>
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ASSISTANTS.

Isabelle A. Worsley,	Margaret Whittemore,
	Eva D. Kellogg.

PRIMARY SCHOOLS.

River street, Lower Mills.

Elizabeth J. Stetson.	<i>Sub-Committee,</i> Mr. Greene.
R. Ellerrine Robie.	“ Mr. Allen.
Caroline Melville.	“ Mr. Porter.
———	“ Mr. McKendry.
Hannah E. Pratt.	“ Mr. Brown.

TILESTON SCHOOL DISTRICT.

COMMITTEE.

John H. McKendry, <i>Chairman.</i>	John W. Porter, <i>Secretary.</i>
Willard S. Allen,	John C. J. Brown.
William T. Adams,	

ANNUAL SCHOOL REPORT.

TILESTON SCHOOL.

*Norfolk street, Mattapan.*Henry B. Miner, *Master.*

ASSISTANTS.

Martha A. Baker,

Emma F. Colomy.

PRIMARY SCHOOLS.

Norfolk street.

Elizabeth S. Fisher.

Sub-Committee, Mr. Allen.

WASHINGTON AND DUDLEY SCHOOL DISTRICT.

COMMITTEE.

Albert E. Dunning, *Chairman.*C. Edwin Miles, *Secretary.*

Ira Allen,

John O. Means,

James Waldock,

Charles K. Dillaway,

Joel Seaverns,

• George F. Emery.

John Kneeland,

WASHINGTON SCHOOL.

*2000 Washington street.*Leverett M. Chase, *Master.*Charles E. Swett, *Sub-Master.*W. Bertha Hintz, *Master's Assistant.* Harriet E. Davenport, *Head Assistant.*

ASSISTANTS.

Louisa W. Emmons,

Mary H. Cashman,

Marietta Rice.

DUDLEY SCHOOL.

*Bartlett street.*Sarah J. Baker, *Principal.*Dora A. Pickering, *Principal's Assistant.*Jane S. Leavitt, *Head Assistant.*

ASSISTANTS.

Mary C. Whippey,	Eliza Brown,
Mary L. Gore,	Mary S. Sprague,
Emma A. Waterhouse,	<i>Sewing Teacher.</i>

PRIMARY SCHOOLS.

Vernon street.

Anna M. Stone.	<i>Sub-Committee,</i>	_____.
S. Louise Durant.	"	Mr. Emery.
H. Amelia Philbrick.	"	Mr. Dillaway.
Anna T. Bicknell.	"	Mr. Waldock.

Putnam street.

Henrietta M. Wood.	<i>Sub-Committee,</i>	Mr. Seaverns.
Mary A. Morse.	"	Mr. Kneeland.
Emma L. B. Hintz.	"	Mr. Means.
Celia A. Scribner.	"	Mr. Miles.

WELLS SCHOOL DISTRICT.

COMMITTEE.

Lucius Slade, <i>Chairman.</i>	James A. McDonough, <i>Secretary.</i>
Nath'l B. Shurtleff,	A. Kendall Tilden,
James Reed,	John E. Quinn,
Samuel H. Wentworth,	William C. Williamson,
Ezra Palmer,	Orran G. Cilley.

WELLS SCHOOL.

Corner of Blossom and McLean streets.

Rodney G. Chase, <i>Master.</i>	Abby J. Boutwell, <i>Master's Assistant.</i>
Delia A. Varney, <i>Head Assistant.</i>	Mary G. Shaw, <i>Head Assistant.</i>

ASSISTANTS.

Mary W. Perry,	Mary T. Locke,
Mary S. Carter,	Mary M. Perry,
Elizabeth P. Winning,	M. Isabella Bennett,
Mrs. Frances E. Stevens, <i>Sewing Teacher.</i>	James Martin, <i>Janitor.</i>

PRIMARY SCHOOLS.

Dean School, Wall street.

Georgia D. Barstow.	<i>Sub-Committee,</i>	Mr. Tilden.
Lavinia M. Allen.	"	Mr. Fabyan.
Lois M. Rea.	"	Mr. Tilden.
Adelaide A. Rea.	"	Mr. Slade.
Mary L. Bailey.	"	Mr. Quinn.

Emerson School, Poplar street.

Maria W. Turner.	<i>Sub-Committee,</i>	Mr. Wentworth.
Emma Dexter.	"	Mr. Reed.
Anna A. James.	"	Mr. Wentworth.
Eliza A. Freeman.	"	Mr. Williamson.
Sarah C. Chevaillier.	"	Mr. Quinn.
Lucy M. A. Redding.	"	Mr. McDonough.

WINTHROP SCHOOL DISTRICT.

COMMITTEE.

Henry P. Shattuck, <i>Chairman.</i>	William Woods, <i>Secretary.</i>
J. Coffin Jones Brown,	Ezra Palmer,
John P. Reynolds,	David W. Foster,
John P. Ordway,	George L. Chaney,
Francis D. Stedman,	George E. Filkins,
John M. Maguire,	John E. Fitzgerald,
Samuel B. Cruft,	David J. O'Connor.

WINTHROP SCHOOL.

Tremont street, near Eliot street.

Robert Swan, <i>Master.</i>	Susan A. W. Loring, <i>Master's Assist-</i>
May Gertrude Ladd, <i>Head Assistant.</i>	<i>ant.</i>
Emma K. Valentine, <i>Head Assistant.</i>	Maria L. Barney, <i>Head Assistant.</i>
Almira Seymour, <i>Head Assistant.</i>	

ASSISTANTS.

Mary F. Light,	Carrie F. Welch,
Elizabeth S. Emmons,	Edith Adams,
Caroline S. Crozier,	Mary E. Davis,

Mary E. Barstow,
Annie I. Stoddard,
Mary L. H. Gerry,
Catharine K. Marlow,

Mary I. Danforth,
Elizabeth H. Bird,
Margaret J. Wise,
Isabella Cummings, *Sewing Teacher*.

PRIMARY SCHOOLS.

Tyler street.

Rachel R. Thayer.
Mary B. Browne.
Henrietta Madigan.
Ella M. Seaverns.
Emma I. Baker.
Mary A. B. Gore.

Sub-Committee, Mr. Woods.
" Mr. Ordway.
" Mr. Maguire.
" Mr. Cruft.
" Mr. Filkins.
" Mr. Foster.

Hudson street.

Julia A. McIntire.

Sub-Committee, Mr. Fitzgerald.

WEST ROXBURY SCHOOL DISTRICT.

COMMITTEE.

Dan S. Smalley, *Chairman*.
John E. Blakemore,
Albert H. Chapman,
George S. Frost,
Pelatiah R. Tripp,

Francis B. Beaumont,
Edward G. Morse,
Joel Seaverns,
Franklin Williams.

MOUNT VERNON GRAMMAR SCHOOL.

COMMITTEE.

Pelatiah R. Tripp,
George S. Frost,

John E. Blakemore.

Abner J. Nutter, *Master*.

ASSISTANTS.

Emily A. Hanna,

Emily M. Porter.

PRIMARY SCHOOLS.

Centre street.

Sarah J. Colburn.

Sub-Committee, Mr. Tripp.

Baker street.

Ann M. Harper.

Sub-Committee, Mr. Tripp.*Shawmut avenue.*

Ada F. Adams,

Sarah Hodges.

Sub-Committee, Mr. Tripp.

CENTRAL GRAMMAR SCHOOL.

Burroughs street.

COMMITTEE.

George S. Frost,
John E. Blakemore,Francis B. Beaumont,
Joel Seaverns.John T. Gibson, *Master*.L. A. Thomas, *Master's Assistant*.E. W. Hastings, *Head Assistant*.

ASSISTANTS.

M. E. Stuart,
C. J. Reynolds,M. A. Gott,
M. M. Sias.

PRIMARY SCHOOLS.

Shawmut avenue.

Amanda Davis,

Sub-Committee, Mr. Frost.*Eliot street, West Roxbury.*

Ella F. Howland,

Emma Smith.

Sub-Committee, Mr. Beaumont.*Child street.*

Mary E. Brooks,

Annie E. Burton.

Sub-Committee, Mr. Frost.

FLORENCE SCHOOL.

Florence street.

COMMITTEE.

John E. Blakemore,
Pelatiah R. Tripp,Albert H. Chapman,
Franklin Williams.Artemas Wiswell, *Master*.Fanny Ashenden, *First Assistant*.Charlotte Hall, *Second Assistant*.

PRIMARY SCHOOLS.

Poplar street, Jamaica Plain.

Delia Bonny.

*Sub-Committee, Mr. Blakemore.**Centre street.*

Sarah Ashinden.

*Sub-Committee, Mr. Blakemore.**Canterbury street.*

Ellen B. DeCoster,

Ellen M. Hancock.

Sub-Committee, Mr. Blakemore.

HILLSIDE SCHOOL.

Elm street, Jamaica Plain.

COMMITTEE.

Francis B. Beaumont,

Pelatiah R. Tripp,

Albert H. Chapman,

Edward G. Morse.

Albert F. Ring, *Master.*Adah E. Smith, *Master's Assistant.*

ASSISTANTS.

Ellen A. Williams,

Amy Hutchins,

Alice B. Stephenson,

Mary E. Very,

Emily H. Maxwell.

PRIMARY SCHOOLS.

Green street.

Fanny C. Kemp,

Anna M. Call.

*Sub-Committee, Mr. Beaumont.**Shawmut avenue.*

E. Augusta Randall,

Jennie A. Eaton.

*Sub-Committee, Mr. Chapman.**Curtis street.*

S. P. Blackburn,

Mary J. Capen.

Sub-Committee, Mr. Smalley.

BRIGHTON SCHOOL DISTRICT.

COMMITTEE.

Joseph Bennett, *Secretary*.

Joseph O'Kane,

Michael Norton,

James H. Rice.

John Kneeland,

BRIGHTON-HARVARD SCHOOL.

*North Harvard street.*James E. Parker, *Principal*.Mary F. Child, *First Assistant*.Sara F. Boynton, *Second Assistant*.Mary B. Monto, *Third Assistant*.

Abby A. Norton,

Alice A. Swett.

BENNETT SCHOOL.

*Winship place, Agricultural Hall.*E. H. Hammond, *Principal*.Catherine D. Russell, *First Assistant*.Anna Leach, *Second Assistant*.Charlotte Adams, *Third Assistant*.Emma F. Chesley, *Fourth Assistant*.

Ellen J. Lane,

Emma P. Dana,

Mary J. Osborn.

PRIMARY SCHOOLS.

Rockland street.

Abby L. Hoar.

Sub-Committee, Messrs. Norton and Kneeland.*Union street.*

Fanny W. Currier.

Sub-Committee, Messrs. Bennett and O'Kane.*Oak square.*

Bertha Sanger.

Sub-Committee, Mr. Breck.*Everett street.*

Elizabeth W. Gibbs.

Sarah F. Monto.

Sub-Committee, Messrs. Morton and Bennett.*Webster street.*

Emma Martin.

Sub-Committee, Messrs. Kneeland and Breck.

Auburn street.

Elizabeth P. Brewer.

Sub-Committee, Messrs. Norton and O'Kane.

BUNKER-HILL SCHOOL DISTRICT.

COMMITTEE.

Charles E. Daniels, *Chairman*.James A. McDonald, *Secretary*.

George H. Marden,

Edwin H. Darling.

Orran G. Cilley,

BUNKER-HILL SCHOOL.

*Baldwin street, Charlestown.*Samuel J. Bullock, *Master*.Henry F. Sears, *Sub-Master*.Mary A. Eaton, *Master's Assistant*.Abby P. Josselyn, *Head Assistant*.Eunice B. Dyer, *Head Assistant*.Georgiana A. Smith, *Head Assistant*.

ASSISTANTS.

Ellen B. Wentworth,

Angelia M. Knowles,

Mary S. Thomas,

Lydia S. Jones,

Ida O. Hurd,

Caroline W. Graves,

Kate C. Thompson,

Anna M. Prescott.

PRIMARY SCHOOLS.

Baldwin street.

Anna P. Stearns.

Sub-Committee, Mr. Daniels.*Haverhill street.*

Helen G. Turner.

Sub-Committee, Mr. Marden.*Bunker-Hill street.*

Mary E. Flanders.

Sub-Committee, Mr. Marden.

Caroline M. Arnold.

" Mr. Daniels.

S. J. Worcester,

Ada E. Bowler.

Sub-Committee, Mr. Darling.

Effie G. Hazen,

S. T. Atwood.

Sub-Committee, Mr. Cilley.

Sarah A. Smith,

E. B. Norton.

Sub-Committee, Mr. McDonald.

CHARLESTOWN-WINTHROP SCHOOL DISTRICT.

COMMITTEE.

Nahum Chapin, *Chairman*.
William H. Finney,

James F. Southworth, *Secretary*.
Retire H. Parker.

CHARLESTOWN-WINTHROP SCHOOL.

Cor. of Lexington and Bunker-Hill streets, Charlestown.

Caleb Murdock, *Master*.

William B. Atwood, *Sub-Master*.

Charlotte E. Camp, *Master's Assistant*.

Harriet E. Frye, *Head Assistant*.

Rial W. Willard, *Head Assistant*.

ASSISTANTS.

Arabella P. Moulton,

Abby M. Clark,

Sara H. Nowell,

Ellen R. Stone,

Georgina H. Warren,

Jennie E. Toby,

Ellen A. Chapin,

Lucy A. Seaver.

PRIMARY SCHOOLS.

Bunker-Hill street, near Tufts street.

Martha Yeaton.

Sub-Committee, Mr. Finney.

Mary P. Swain.

" Mr. Parker.

Moulton street.

Persis M. Whittemore,

Frances B. Butts.

Sub-Committee, Mr. Chapin.

Louisa W. Huntress.

Sub-Committee, Mr. Mahan.

Tremont street.

Marietta F. Allen,

O. H. Morgan.

Sub-Committee, Mr. Southworth.

WARREN SCHOOL DISTRICT.

COMMITTEE.

William H. Finney, *Chairman*.

Charles E. Daniels, *Secretary*.

Retire H. Parker,

George D. Ricker.

James F. Southworth,

WARREN SCHOOL.

Summer street, Charlestown.

George Swan, <i>Master.</i>	E. B. Gay, <i>Sub-Master.</i>
Sarah M. Chandler, <i>Master's Assistant.</i>	Annie D. Dalton, <i>Head Assistant.</i>
	Anna S. Osgood, <i>Head Assistant.</i>
Margaret, W. Veazie, <i>Head Assistant.</i>	

ASSISTANTS.

Elizabeth Swords,	Frances L. Dodge,
Abby E. Holt,	Ellen A. Pratt,
Abby C. Lewis,	Maria L. Bolan,
Alice Hall,	Louisa T. Swan.

PRIMARY SCHOOLS.

Common street, Charlestown.

Elizabeth A. Prichard.	<i>Sub-Committee.</i> Mr. Ricker.
Elizabeth A. Brower,	Mary F. Kittredge.
	<i>Sub-Committee,</i> Mr. Parker.
Effie A. Kettell.	<i>Sub-Committee,</i> Mr. Southworth.
Catherine C. Brower.	" Mr. Daniels.
Alice S. Hatch.	" Mr. Finney.

Warren School-house.

Caroline M. Sisson, *Special Instruction.*
Sub-Committee, Mr. Finney.

CHARLESTOWN-PRESCOTT SCHOOL DISTRICT.

COMMITTEE.

George H. Marden, <i>Chairman.</i>	Edwin H. Darling, <i>Secretary.</i>
Nahum Chapin,	George B. Neal.
Benjamin F. Campbell,	

PRESCOTT SCHOOL.

Elm street, Charlestown.

George T. Littlefield, <i>Master.</i>	Alonzo Meserve, <i>Sub-Master.</i>
Mary G. Prichard, <i>Master's Assistant.</i>	Martha M. Kendrick, <i>Head Assistant.</i>
Mary C. Sawyer, <i>Head Assistant.</i>	

ASSISTANTS.

Julia C. Powers,
Ellen C. Dickinson,
Frances A. Craigin,

Elizabeth J. Farnsworth,
Lydia A. Sears,
Julia E. Sawyer.

PRIMARY SCHOOLS.

Medford street.

Mary E. Smith,

Ellen Hadley.
Sub-Committee, Mr. Neal.

Polk street.

F. M. Lane,

E. F. Hanson.
Sub-Committee, Mr. Campbell.

Mead street.

Elizabeth W. Yeaton.
Melissa J. A. Conley.
Abby P. Richardson.
M. Josephine Smith.

Sub-Committee, Mr. Marden.
" Mr. Darling.
" Mr. Marden.
" Mr. Darling.

Cross street.

Caroline E. Osgood,

Abby O. Varney.
Sub-Committee, Mr. Chapin.

CHARLESTOWN-HARVARD SCHOOL DISTRICT.

COMMITTEE.

James F. Southworth, *Chairman*.
George B. Neal,
Lucius Slade,

Retire H. Parker, *Secretary*.
James A. McDonald.

HARVARD SCHOOL.

Bow street, Charlestown.

W. E. Eaton, *Master*.

Darius Hadley, *Sub-Master*.

Abby B. Tufts, *Master's Assistant*.

Ann E. Weston, *Head Assistant*.

Sarah E. Leonard, *Head Assistant*.

ASSISTANTS.

Sarah A. Benton,	Mary P. Howland,
Lucy A. Kimball,	Fanny B. Hall,
Emma F. Thomas,	Elizabeth B. Wetherbee,
Lois A. Rankin,	Mary A. Emery.

PRIMARY SCHOOLS.

Harvard Hill.

Lucy M. Small.	<i>Sub-Committee,</i> Mr. Neal.
Fanny A. Foster.	“ Mr. McDonald.
Hannah W. Heath.	“ “
C. M. W. Tilden.	“ Mr. Slade.
Elizabeth F. Doane.	“ Mr. Parker.
Caroline A. Rea.	“ Mr. Slade.
Lucy M. Soule.	“ Mr. Neal.
Louisa A. Whitman.	“ Mr. Parker.

SCHOOLS FOR LICENSED MINORS.

North Margin street.

Sarah A. Brackett.

East-street place.

M. Persis Taylor.

SCHOOL FOR DEAF MUTES.

*11 Pemberton square.*Sarah Fuller, *Principal.*

ASSISTANTS.

Annie E. Bond,	Ella C. Jordan,
Kate D. Williams,	Mary F. Bigelow,
Alice M. Jordan,	Mary N. Williams.

KINDERGARTEN SCHOOL.

*Corner of Allston and Somerset streets.*Lucy H. Symonds, *Principal.*

HOLIDAYS AND VACATIONS.

Wednesday and Saturday afternoons; one week commencing with Christmas day; New Year's day; the Twenty-second of February; Good Friday; Fast day; Decoration day, and the Fourth of July; Thanksgiving day and the remainder of the week; the week immediately preceding the second Monday in April; and to the Primary schools from the second Tuesday in July, and to the Grammar schools from their respective exhibitions to the first Monday in September; and to the Latin, the Normal, and the High schools from their respective exhibitions to the *second* Monday in September.

TRUANT OFFICERS.

The following is the list of the Truant Officers, with their respective districts, and with the school sections embraced in each district:—

OFFICERS.	DISTRICTS.	SCHOOL SECTIONS.
Chase Cole.	North.	Eliot, Hancock.
C. E. Turner.	East Boston.	Adams, Chapman, Lyman, and Prescott.
Geo. M. Felch.	Central.	Bowdoin, Mayhew, Phillips, and Wells.
Jacob T. Beers.	Southern.	Brimmer, Bowditch, Quincy, and Winthrop.
Phineas Bates.	South Boston.	Andrew, Bigelow, Gaston, Lawrence, Lincoln, Norcross, and Shurtleff.
A. M. Leavitt.	South.	Dwight, Everett, Rice, and Franklin.
Samuel McIntosh.	Roxbury, East District.	Lewis, Dearborn, and Washington.
E. F. Mecuen.	Roxbury, West District.	Comins, Dudley, and Sherwin.
Jeremiah M. Swett.	Dorchester, Northern District.	Lewis, Everett, Mather, Monroe st., and Winthrop st.
James P. Leeds.	Dorchester, Southern District.	High, Harris, Gibson, Tileston, Stoughton, Atherton, and Minot.
Charles S. Wooffindale.	Charlestown, West District.	Bunker Hill and Harvard, Mead st. and Common st. Primaries.
Sumner P. White.	Charlestown, East District.	Warren, Winthrop, and Prescott, except the above Primaries.
H. McDonald.	West Roxbury.	Central, Florence, Hillside, and Mt. Vernon.
H. F. Ripley.	Brighton.	Bennett and Harvard.

ORDER BOXES.

North District.

Hancock School-house.

Police Station No. 1, Hanover street.

East Boston.

Adams, Chapman, and Prescott School-houses.

Police Station No. 7, Meridian street.

Central District.

Mayhew School-house,

Police Station No. 3, Joy street.

Southern District.

Brimmer and Quincy School-houses.

Police Station No. 4, La Grange street.

South Boston.

Bigelow and Lincoln School-houses.

Police Station No. 6, Broadway, near C street.

South District.

Dwight and Rice School-houses.

Police Station No. 5, East Dedham street.

Roxbury, East District.

Dearborn, Lewis, and Washington School-houses.

Roxbury, West District.

Sherwin and Comins School-houses.

Dorchester, Northern District.

Lewis, Everett, Mather, and Monroe street School-houses.

Dorchester, Southern District.

Harris, Gibson, Stoughton, and Minot School-houses.

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City Document.— No. 82.

CITY OF BOSTON.



REPORT

OF THE

COMMITTEE ON PUBLIC INSTRUCTION

ON ESTABLISHING A

NAUTICAL SCHOOL.

CITY OF BOSTON.

IN COMMON COUNCIL, Oct. 1, 1874.

Laid on the table, and ordered to be printed.

Attest :

W. P. GREGG,
Clerk of the Com. Council.

CITY OF BOSTON.

IN COMMON COUNCIL, July 16, 1874.

Ordered, That the Committee on Public Instruction consider the expediency of the establishment of a free school, for the instruction of boys in navigation, seamanship, marine enginery, and all matters pertaining to the proper construction, equipment, and sailing of vessels, and that they make inquiry of the naval authorities at this port, what co-operation may be had from the United States Government toward the same, and report on the subject on or before the 1st October next.

Sent up for concurrence.

E. O. SHEPARD,
President.

IN BOARD OF ALDERMEN, July 20, 1874.

Concurred.

JOHN T. CLARK,
Chairman.

Approved July 21, 1874.

SAMUEL C. COBB,
Mayor.

CITY OF BOSTON.

The Committee on Public Instruction, who were requested to consider the expediency of establishing a free school for the instruction of boys in navigation, seamanship, marine enginery, and all matters pertaining to the proper equipment and sailing of vessels, beg leave to submit the following report. The subject of establishing a Nautical School has been urged upon the attention of the City Government several times during the past fifteen years. The nautical branch of the State Reform School went into operation in 1860; and in the following year Captain R. B. Forbes memorialized the City Council to establish, as a part of our system of public education, a school for instruction in the common English branches and in practical seamanship and navigation. The committee to whom the memorial was referred made a general recommendation in favor of establishing such a school, but stated that the execution of any specific plan was attended with so many difficulties that they hesitated to put their recommendation into form for definite action. The times were unfavorable to the consideration of any new measures except those relating to the successful prosecution of the war in which the country was then engaged, and as a consequence the committee's recommendation failed to take practical shape.

In 1870, Captain Forbes made another appeal for action on the part of the City Council; and submitted to the committee charged with the investigation of the subject a large

amount of valuable information concerning the operation of nautical schools established in other cities.

Although the committee appeared to regard the project favorably, they failed to make any recommendation to the government, and the matter was presented to the Committee on Public Instruction in the following year, as unfinished business. That committee found that the city had no power to appropriate money for the purpose of establishing such a school, and thereupon the whole matter was dropped.

It is now presented to the government under somewhat different circumstances. At the last session of Congress an act was passed authorizing the Secretary of the Navy to furnish, upon application of a Governor of a State, a vessel of the navy, properly fitted up to be used for the benefit of any Nautical School established at each or any of the ports of New York, Boston, Philadelphia, Baltimore and San Francisco, upon the condition that there shall be maintained at each port a school, or branch of a school, for the instruction of youths in navigation, seamanship, marine enginery, etc.; and the President is authorized to detail proper officers of the navy as superintendents of, or instructors in, such schools.

The full text of the act is appended hereto.

The Legislature of the State of New York having, by an act passed in 1873, provided for the establishment of a Nautical School, the Board of Education of the City of New York have taken the necessary steps to obtain a vessel; a naval officer has been detailed as instructor, and a school is now being organized at that port. A copy of the proceedings of the Board of Education upon the subject is appended hereto.

Requisitions have been made by the authorities of Philadelphia and San Francisco for suitable vessels, to be used for the same purpose.

In Baltimore a "Floating Public School" has long been

established. Under the ordinances of the city the Commissioners of Public Schools are authorized and empowered to organize and put in operation a public school of such grade as may seem to them advisable, on board of any ship, or other vessel that may, for the time being, be used by the Board of Trade of Baltimore as a Nautical School. The relations which the city authorities occupy to the school established there are set forth in the following memorandum, signed by a committee of the Board of Trade and the School Commissioners : —

“It was agreed, that in the establishment of the proposed school, the School Commissioners should furnish teachers, and the same course of instruction, so far as it would be applicable, as are now employed in our schools — with desks, seats, and all necessary books and stationery, and should devote themselves to the same care and supervision that they now give to the public schools ; and on the part of the Board of Trade, and the citizens generally, whose assistance it will invoke, it was proposed that the vessel to be used for the purpose of the school should be provided with the person to take charge of the same, and all necessary rigging, tackle, etc. ; also, whatever nautical apparatus is required, and adequate teachers to instruct the boys in all that relates to seamanship.”

In this connection the following account of the Nautical Schools in Liverpool (extracted from Captain Forbes's address to the Committee on Public Instruction in 1870), will be of interest : —

“In Liverpool there are three institutions for the education of seamen. First is the ‘Mercantile Marine Service Association,’ — conducted on board H. M. ship ‘Conway,’ — and is designed to train, and complete the education of boys intended for officers in the merchant service. Boys intended for the Royal Navy are also admitted, and receive special training for that service. The terms for admission are £40

per annum, the parents of children finding underclothes, and ten guineas are charged for uniform. Children of members have certain privileges. Boys between twelve and sixteen are received; and they must know how to read and perform the simple rules of Arithmetic, and they must pass a medical examination. So far as I can see by glancing over the reports, I believe the Government furnish the ship and Her Majesty the Queen gives honorary tokens of merits; but the current expenses are paid from subscriptions, and I infer the expenses exceed the receipts. The next in order is the training ship 'Indefatigable,' — where the sons and orphans of sailors, and other poor and destitute boys, are taught. This institution is established, as I learn from the report of 1868, 'with a view to rescue from temptation, poverty and crime the wandering and orphan Arabs of the streets, and to train them in habits of industry and usefulness in the mercantile marine.' This school is mainly dependent on private contributions, which, for 1867, amounted to only £1,528, — not sufficient to maintain the one hundred boys, then on board. None are received under twelve, or over fifteen years of age; and none who cannot pass a medical examination. Preference is given to boys belonging to Liverpool, but others are received. The Mayor is President, *ex officio*.

The total receipts for 1867 were	£2,176 05s. 4d.
And the expenses	2,160 00s. 6d.

" I am not aware whether or no the Government has furnished the ship, but I presume so.

" Some of the items of maintenance are: salaries, £790; provisions, £598; clothing, £222; outfit for 31 boys sent to sea, £138. The other ship is the 'Akbar,' — a reformatory institution, and constitutes a branch or portion of the 'Liverpool Juvenile Reformatory Institution,' the other parts being

the 'Liverpool Girls' Reformatory' and the 'Liverpool Farm School.' The Mayor of Liverpool is the President."

Although the general government will undoubtedly furnish, upon application by the proper authorities, a suitable vessel, and detail an able instructor for duty at this port, the establishment and maintenance of the school will involve a considerable annual expense to the city; and your committee have been advised by the City Solicitor that further legislation will be required to enable the city to appropriate money for the purpose. A copy of his opinion is appended; also, a list of the branches authorized to be taught in our schools, and an extract from an opinion of Judge Shaw, bearing upon the subject.

The question, therefore, to be determined is whether, in view of the action of the U. S. Government, it is expedient to petition the Legislature for authority to organize and maintain such a school. It is by no means a matter of course that the offer of the government should be accepted. Unless it can be shown that the results of such an establishment are likely to repay the expense, the city ought not to act in the matter. Although the school to be established under the auspices of the national authorities will be on a different basis from the one established by the State in 1860, and recently abandoned, an examination of the reasons which led to the abandonment of the State institution cannot fail to furnish some useful hints upon the subject now under consideration.

Governor Washburn, in his inaugural address to the Legislature in 1872, said: —

"The Nautical School was established in the belief that it would be very useful in forming a good class of sailors. That it at least partially answered this expectation while the war furnished both an outlet and an incentive to the boys, is unquestionably true; but I seriously doubt the wisdom or expediency of continuing the school. At the date of the last

report 144 boys were on the school ship, — kept there at an expense to the State nearly twice as great per boy as is incurred for those at Westborough. No thorough classification is possible on board the ship, and the very vicious and comparatively good are necessarily crowded together. They cannot be kept at study all the time; there is little opportunity to do anything else, and it is extremely difficult to provide them with suitable work. The system does not tend to reformation so much as the Westborough system. Few of the boys are willing to go to sea, and, steam navigation having to so great an extent superseded the necessity for sailing vessels, there is not much demand for them. During the past year only 29 were shipped, of whom 11 were placed in the revenue service, from which most of them promptly deserted. It is manifestly unwise to expend considerable sums in fitting boys for a calling which they are not to pursue, and I therefore recommend that early provision be made for the close of the school and the sale of the school-ship."

As the proposed school when established would naturally be placed under the control and management of the School Committee, and as nothing can be done until after the next Legislature assembles, your committee would recommend that the subject be referred to the School Board, with a request to consider and report to the City Council as early as practicable upon the expediency of establishing a Nautical School, and the probable annual expense to the city of maintaining the same.

Respectfully submitted, for the Committee,

CHAS. J. PRESCOTT,

Of the Board of Aldermen.

W. H. WEST,

Of the Common Council.

*An Act to encourage the establishment of public Marine Schools.**

Be it enacted, etc., That the Secretary of the Navy, to promote nautical education, is hereby authorized and empowered to furnish, upon the application in writing of a Governor of a State, a suitable vessel of the navy, with all her apparel, charts, books, and instruments of navigation, provided the same can be spared without detriment to the naval service, to be used for the benefit of any nautical school, or school or college having a nautical branch, established at each or any of the ports of New York, Boston, Philadelphia, Baltimore, and San Francisco, upon the condition that there shall be maintained at such port a school or branch of a school for the instruction of youths in navigation, seamanship, marine enginery, and all matters pertaining to the proper construction, equipment, and sailing of vessels, or any particular branch thereof; and the President of the United States is hereby authorized, when in his opinion the same can be done without detriment to the public service, to detail proper officers of the navy as superintendents of, or instructors in, such schools;

Provided, That if any such school shall be discontinued, or the good of the naval service shall require, such vessel shall be immediately restored to the Secretary of the Navy, and the officers so detailed recalled; *and provided further*, That no person shall be sentenced to, or received at, such schools as a punishment or commutation of punishment for crime.

*The laws of the last session of Congress have not been officially published yet. The copy of this act is taken from the City Record of New York, and certified as correct by the Chief Clerk of the U. S. Senate.

*Extract from proceedings New York Board of Education,
July 1, 1874.*

By unanimous consent Commissioner Wetmore offered the following preamble and resolution, and asked for their consideration : —

Whereas, By a recent law of Congress the Secretary of the U. S. Navy has been empowered "to furnish, upon the application of the Governor of a State, a suitable vessel of the navy, with all her apparel, charts, books and instruments of navigation, etc., to be used for the benefit of any Nautical School" established at this port; and

Whereas, The establishment of such Nautical School has been expressly provided for by an Act of the Legislature of the State of New York, passed April 24, 1873, and an Executive Committee appointed by the President of this Board on the 30th day of April, 1873, to supervise the organization of the same; therefore, be it

Resolved, That the President of this Board be requested to communicate with his Excellency John A. Dix, Governor, and solicit him to apply, upon the conditions of the United States law above quoted, to the Secretary of the Navy for a suitable vessel of the navy, with all her apparel, charts, books, and instruments of navigation, to be used for the benefit of the said Nautical School to be established pursuant to the provisions of the said act of the State Legislature.

Adopted.

From proceedings August 5, 1874.

The President laid before the Board a communication from his Excellency John A. Dix, Governor of New York, together with a communication from the Secretary of the Navy, as follows : —

EXECUTIVE CHAMBER, }
ALBANY, 31st July, 1874. }

SIR: — The Governor directs me to send to you the enclosed copy of a letter, which he received to-day from the Secretary of the Navy, relating to the use of a United States vessel for the benefit of the Nautical School under the Board of Education of the City of New York.

I am, sir, very respectfully,
Your obedient servant,

JOHN W. DIX,
Private Secretary.

WM. H. NEILSON, ESQ.,
President Board of Education, N. Y.

(COPY.)

NAVY DEPARTMENT, }
WASHINGTON, July 29, 1874. }

SIR: — I have the honor to acknowledge the receipt of your communication of the 22d instant, applying for the use of a vessel of the navy for the benefit of the Nautical School under the Board of Education of the City of New York.

This matter has been referred to the Bureau of Construction and Repair, and will receive attention so soon as the proper arrangements can be made.

Very respectfully,

GEO. M. ROBESON,
Secretary of the Navy.

His Excellency JOHN A. DIX,
Governor of New York.

On motion —

Ordered, That said communications be entered in full in the minutes, and referred to the Executive Committee on Nautical School.

Commissioner Wetmore presented a report from the Executive Committee on Nautical School, as follows:—

To the Board of Education, —

The Executive Committee on Nautical School, to whom was referred, "with power to reply" thereto, the communication of the 11th of July, from his Excellency Governor Dix, in response to the request of the Board that an application be made by him to the Secretary of the Navy, in accordance with the act passed at the late session of Congress, for a suitable vessel, etc., of the navy, to be used for the benefit of a Nautical School, respectfully

REPORT:

That, by authority of said reference, your committee addressed Governor Dix in answer to his communication, reciting the several resolutions of this Board authorizing the establishment of such a school, adopted in compliance with the act of the Legislature of 1873, and stating the necessity that existed for first ascertaining what accommodations could be relied upon to be furnished by the Secretary of the Navy for its organization, under the authority granted by the late act of Congress, and which organization will require the appointment of a superintendent and other arrangements, which must be necessarily entered into before inviting boys to enroll themselves as pupils. These representations were satisfactory to the Governor, and in a note addressed to the chairman of your committee, dated the 22d ult., he says, "I have made application to the Navy Department, as requested by the Board of Education, for a vessel for the Nautical School." This application, your committee are informed, has been received by the Secretary of the Navy, and by him referred to the "Bureau of Construction and Repair," with an assured prospect of soon having a vessel with the requisite appurtenances assigned by the Secretary for the purposes of the school. The absolute necessity,

therefore, is apparent, that the Board should now appoint a principal "Superintendent," who will be authorized to take charge of the vessel as soon as she is designated by the Secretary, attend to her fitting up, and see that she is completely prepared for the reception of pupils, and in such manner as to insure the success of this highly important experiment, designed for the improvement of the marine service of this port.

Your committee have had presented to them for this position, Commander R. L. Pythian, of the United States Navy, now in active service, who is highly recommended as fully competent, by education, character, and experience in the naval service, to take charge of and insure success to this enterprise. Having given to this first appointment, as well as to the other essentials for the organization of this school, the greatest consideration, in order that all the prerequisites necessary to insure the accomplishment of what is expected from its establishment may be put in operation, and being of the opinion that the gentleman named is entitled to your confidence, we nominate him for the position, at a salary of \$2,000 per annum, to be paid from date of commencement of service; and with the expectation that the President of the United States will, as authorized by the act of Congress passed at the late session, detail Commander Pythian to this position.

The following preamble and resolutions are submitted for your consideration:—

Whereas, This Board is informed that his Excellency John A. Dix, Governor of the State of New York, has, at the request of this Board, made application to the Secretary of the Navy, in accordance with the provisions of a late act of Congress, for "a suitable vessel of the navy, with all her apparel, charts, books and instruments of navigation," "to be used for the benefit of any Nautical School" established at

this port by authority of the Act of the Legislature of this State, passed April 24, 1873; and

Whereas, It is probable that the Secretary of the Navy, in compliance with the application of the Governor, will, at an early day, furnish a vessel of the navy, with her apparel, etc., "for the benefit of the Nautical School so established," and that upon such vessel, etc., being furnished, it will be necessary to have her placed immediately in charge of the Superintendent of the School; therefore,

Resolved, That Commander R. L. Phythian, of the United States Navy, be and he hereby is appointed Superintendent of the Nautical School established by this Board; provided that the President of the United States shall detail Commander Phythian for this service, as authorized by the late act of Congress in reference to Nautical Schools.

Resolved, That the salary of the Superintendent of the Nautical School be and the same is hereby fixed at two thousand dollars (\$2,000) per annum, to take effect from the commencement of service.

Respectfully submitted.

DAVID WETMORE,
WM. DOWD,
WM. H. NEILSON,
JOS. SELIGMAN,

Executive Committee on Nautical School.

NEW YORK, August 5, 1874.

The President put the question whether the Board would adopt said preamble and resolutions.

And it was decided in the affirmative.

Commissioner Wetmore offered the following resolution:—

Resolved, That the President of this Board be and he hereby is authorized and requested to solicit the President of the United States to detail Commander R. L. Phythian, of the United States Navy, to be Superintendent of the Nautical School, established by this Board for the port of New York, "if, in his opinion, the same can be done without detriment to the public service."

The President put the question whether the Board would adopt said resolution.

And it was decided in the affirmative.

CITY SOLICITOR'S OFFICE, 2 PEMBERTON SQUARE,
BOSTON, September 21, 1874.

SIR:—In my opinion, the City Council have not a legal right to appropriate money from the City Treasury for the support of a Nautical School, such as is contemplated by the accompanying order. Municipal authorities cannot raise or appropriate money for the support of any schools other than those which are authorized by statute; and no statute authorizes a school of this description to be provided for at the expense of cities or towns.

Very respectfully,

Your obedient servant,

J. P. HEALY.

MR. ALDERMAN PRESCOTT,

Chairman Committee on Public Instruction.

List of the branches authorized to be taught in the Public Schools of this City:—

Orthography.

Reading.

Writing.

English Grammar.

Geography.

•

Arithmetic.
General and Local History.
Good Behavior.
Algebra.
Vocal Music.
Drawing (Art, Mechanical and Industrial).
Physiology.
Hygiene.
Agriculture.
Book-keeping.
Surveying.
Geometry.
Natural Philosophy.
Chemistry.
Botany.
Civil Polity of the Commonwealth and of the United States.
Greek.
French.
Latin.
Astronomy.
Geology.
Rhetoric.
Logic.
Intellectual and Moral Science.
Political Economy.

The studies are given in the order named in the statutes.

Extract from the opinion of Shaw, C. J., in *Cushing v. Inhabitants of Newburyport*: —

"It is urged that if this [the provision that towns shall have power to raise 'such sum of money as they shall judge necessary for the support of town schools'] be construed to

be an unlimited power, towns might raise money to support a medical, theological, or law school, or a military school. But this we think would not be a just conclusion. They are still to be *town* schools, and designed for general education of all the people; and what are understood by town schools must be determined by an honest application of the rules of good sense, in ascertaining the meaning of these well-known terms by long established and approved usage and the known policy of the Legislature."

City Document.— No. 83.

CITY OF BOSTON.



AUDITOR'S MONTHLY EXHIBIT.

OCTOBER 3, 1874.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS
FOR 1874-75.

MONTHLY EXHIBIT.

OFFICE OF THE AUDITOR OF ACCOUNTS, }
CITY HALL, Oct. 3, 1874. }

TO THE HONORABLE CITY COUNCIL :

GENTLEMEN, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1874-75, as shown in the books in his office, October 1, 1874, including the October draft, being six months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,

Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Addition to City Hospital . . .	\$190,000 00	.	\$190,000 00
Advertising	6,000 00	\$1,483 91	4,516 09
Annuities	512 00	245 00	267 00
Armories	25,000 00	13,766 01	11,233 99
Assessors' Department	104,729 00	71,579 81	33,149 19
Bells and Clocks	6,475 00	1,440 87	5,034 13
Bennett Grammar School-house, } Brighton }	48,230 50	20,330 68	27,899 82
Board of Health	102,100 00	30,920 13	71,179 87
Boston Harbor	10,000 00	2,571 65	7,428 35
Bridges	52,000 00	21,019 41	30,980 59
Brighton Fire Alarm Extension .	6,460 00	4,272 67	2,187 33
Cedar Grove Cemetery }	4,218 40	12,330 86	\$84.60 provided for.
Add Revenue rec'd, \$7,247.86 }			
Charles River and Warren Bridges	45,102 00	3,691 31	41,410 69
Chestnut Hill Driveway	18,500 00	9,043 10	9,456 90
City Hospital	120,000 00	56,754 18	63,245 82
City Registrar's Department . .	12,400 00	4,936 93	7,463 07
Common, etc.	³ 116,400 00	70,255 18	46,144 82
Contingent Funds, viz.:			
Joint Com'ttees of the City Council	4,000 00	1,718 45	2,281 55
Mayor	1,500 00	202 50	1,297 50
Board of Aldermen	1,500 00	1,445 45	54 55
Common Council	3,000 00	1,850 62	1,149 38
County of Suffolk	350,000 00	153,675 85	196,324 15
East Boston Ferries	270,000 00	144,482 83	125,517 17
Elevator, City Hall	12,000 00	1,422 60	10,577 40
Engineer's Department	30,881 00	12,369 79	18,511 21
Engine House and Land, Dover St.	45,000 00	20,080 59	24,919 41
Engine House and Land, Parker St.	40,000 00	11,157 50	28,842 50
Engine House and Land, Fulton St.	45,000 00	.	45,000 00
Evergreen Cemetery }	4738 00	759 03	474 97
Add Revenue received, \$496 }			
Fire Department	695,742 00	330,664 39	355,077 61
Fire Alarm Telegraph	43,215 00	13,896 67	29,318 33
Grammar School-house, Dudley } District }	49,930 99	48,283 92	1,647 07
Grammar School-house, Everett } District, Ward 16 }	20,000 00	.	20,000 00
Grammar School-house, Ward 15, } Building }	46,265 20	40,167 82	6,097 38
Additional Land	5,000 00	5,000 00	.
<i>Carried forward</i>	\$2,531,899 09	\$1,121,819 71	\$1,418,687 84

¹ Brought from last year, \$2,530 50

Transferred from the Reserved Fund, 27,700 00

² Balance of revenue from last year, 1,218 40³ Transferred from the Reserved Fund, 700 00⁴ Balance of revenue from last year, \$138 00⁵ Brought from last year, 19,930 99⁶ Brought from last year, 21,865 20

Transferred from the Reserved Fund, 4,400 00

AUDITOR'S MONTHLY EXHIBIT.

5

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
<i>Brought forward</i>	\$2,531,899 09	\$1,121,819 71	\$1,418,687 84
Grammar School-house, Washing- ton Village:			
Building	120,000 00		120,000 00
Land	35,000 00		35,000 00
Grammar School-house, Winthrop District, Charlestown:			
Building	75,000 00		75,000 00
Land	50,000 00	44,158 00	5,842 00
Health Department	446,607 00	207,805 14	238,801 86
Highland street Stable	¹ 20,673 82	19,305 71	1,368 11
Holton Library Building, Brighton	² 18,096 50	14,283 80	3,812 70
Incidental Expenses			
Add Income Trust Funds, \$546.80 }	87,000 00	43,743 22	43,803 58
Inspection of Buildings	22,000 00	10,841 10	11,158 90
Interest and Premium	2,055,000 00	760,386 10	1,294,613 90
Lamps	455,500 00	195,246 63	260,253 37
Markets	11,195 00	4,947 20	6,247 80
Mount Hope Cemetery			
Add Revenue rec'd, \$8,625.97 }	³ 26,311 74	24,149 66	10,788 05
Mystic Water Works			
Add Revenue rec'd, \$69,181.00 }		85,062 48	\$15,881.48 prov'd for.
New Engine House, Brighton	3,000 00	2,516 06	483 94
Overseers of the Poor	101,825 00	40,878 99	60,946 01
Old Claims	1,500 00	308 10	1,191 90
Paving, etc.	1,300,000 00	703,391 01	596,608 99
Police	865,000 00	410,365 28	454,634 72
Police Station-house, Ward 16	443,983 63	20,047 06	23,936 57
Police Station-house, West Roxbury	⁵ 14,310 50	14,278 67	31 83
Primary School-house, City Point	15,000 00		15,000 00
Primary School-house, Cottage Place, Roxbury:			
Building	50,000 00		50,000 00
Land	⁶ 28,000 00		28,000 00
Primary School-houses, East Boston	⁷ 18,539 56	16,884 93	1,654 63
Primary School-house, Gibson Dist.:			
Building	15,000 00		15,000 00
Land	6,000 00	6,000 00	
Primary School-house, Lawrence Dis- trict:			
Building	50,000 00		50,000 00
Land	25,000 00	21,855 75	3,144 25
Primary School-house, Quincy St.	50,000 00	40 26	49,959 74
Printing and Stationery	38,000 00	18,283 58	19,716 42
Public Baths	40,000 00	21,573 88	18,426 12
<i>Carried forward</i>	\$8,619,441 84	\$3,808,172 32	\$4,914,113 23

¹ Brought from last year, \$15,673 82
² Brought from last year, 3,096 50
³ Bal. of revenue brought from last year, 2,811 74
 Transferred from the Reserved Fund, 6,000 00
⁴ Brought from last year, 38,983 63

⁵ Brought from last year, \$9,310 50
⁶ Transferred from the Reserved Fund, 2,000 00
⁷ Brought from last year, 1,339 56
 Transferred from the Reserved Fund, 5,200 00

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. unexpended.
<i>Brought forward</i>	\$8,619,441 84	\$3,808,172 32	\$4,911,113 23
Public Buildings	107,000 00	66,816 77	40,183 23
Public Institutions, viz.: . .			
House of Industry	210,000 00	115,651 44	94,348 56
House of Correction	110,000 00	59,274 94	50,725 06
Lunatic Hospital	65,000 00	32,367 10	32,632 90
Pauper Expenses	60,000 00	19,006 75	40,993 25
Steamboat "Henry Morrison" .	20,000 00	11,910 00	8,090 00
Office Expenses	9,000 00	3,937 35	5,062 65
New Laundry Building, Deer Island	15,000 00	9,133 09	5,866 91
Public Lands	6,000 00	3,655 38	2,344 62
Public Library	135,000 00	60,690 13	74,309 87
Public Library Building Improvem't	30,000 00	13,048 76	16,951 24
Quarantine Department . . .	20,000 00	6,676 96	13,323 04
Registration of Voters and Election } Expenses }	20,000 00	3,633 46	16,366 54
Reserved Fund	1250,100 00		250,100 00
Roxbury High School-house . .	30,000 00	15,371 50	14,628 50
Salaries	104,900 00	49,812 62	55,087 38
Schools and School-houses, viz.: .			
School Instructors	1,256,600 00	592,444 60	664,155 40
School expenses, School Committee	119,400 00	77,783 70	41,616 30
Salaries officers, School Committee	35,400 00	16,974 00	18,426 00
School-houses, Public Buildings	332,000 00	230,498 32	101,501 68
Sealers of Weights and Measures .	7,400 00	3,239 70	4,160 30
Sewers	300,000 00	107,796 47	192,203 53
Sheds, Health Department . . .	10,000 00	2,529 18	7,470 82
Sinking Fund Commissioners . .	2,800 00	1,350 00	1,450 00
Surveyor's Department	59,000 00	27,957 43	31,042 57
Water Works	787,500 00	416,227 36	371,272 64
Water Works, Interest and Premium	711,000 00	64,605 00	646,395 00
West Boston and Cragie's Bridges	109,809 04	56,207 29	53,601 75
Widening Streets	300,000 00	88,113 28	211,886 72
Total Appropriations, \$13,645,143 00		\$5,964,884 90	\$7,980,309 69
Balances from 1873-4, 197,207 88		Less provided for	16,746 08
	\$13,842,350 88		
Add Revenue,	86,097 63		\$7,963,563 61
	\$13,928,448 51		

¹ \$3,900 00 transf'd from Res'd Fund to Salaries.

5,200 00 " " Primary School-houses, East Boston.
6,000 00 " " Mount Hope Cemetery.
27,700 00 " " Bennett Grammar School-house, Brighton.
4,400 00 " " Grammar School-house, Ward 15.
700 00 " " Common, etc.
2,000 00 " " Primary School-house, Cottage Place, Roxbury.

² Transferred from Reserved Fund. \$3,900.

³ Brought from last year, \$80,309 04.

SPECIAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans) . .	\$432,315 59	\$91,918 54	\$340,397 05
Atlantic Avenue (loans)	131,494 13	35,000 00	96,494 13
Beach Street (loans)	251,000 00	• • • • •	251,000 00
Broadway Bridge Foundations (loan)	110,295 00	5,034 21	105,260 79
Broadway Extension (loans)	80,680 21	• • • • •	80,680 21
Burnt District (loans)	1,641,647 88	562,002 52	1,079,645 36
Canton Street Grading (loan)	1,225 20	• • • • •	1,225 20
Columbus Avenue Extension (loan)	21,931 80	175 74	21,756 06
Devonshire Street Extension (loans)	92,163 57	35,207 59	56,955 98
Eastern Avenue and Bridge (loan)	193,122 00	7,688 89	185,433 11
Engine and Hook and Ladder House, Ward 5 (loans)	17,931 34	17,942 44	8 90
Engine House, Mason Street (transfer)	5,537 55	1,836 28	3,701 27
Fort Hill Improvement (loans)	80,477 35	66,362 90	14,114 45
Harrison Avenue Extension (loan)	45,960 47	• • • • •	45,960 47
Home for Poor, Deer Island (transfer)	150,000 00	• • • • •	150,000 00
Hook and Ladder House No. 4, (reserved fund) . .	5,557 31	5,535 98	21 33
Hose House, Longwood (loan)	15,421 75	14,656 19	765 56
Memorial Monument, Boston Common (transfer) . .	75,000 00	• • • • •	75,000 00
New Lunatic Hospital (loan and appropriation) . .	103,044 04	• • • • •	103,044 04
Northampton Street District (loan and transfer) . .	202,573 67	32,632 62	169,941 05
Oliver Street (revenue)	1,748 74	5,748 75	\$4,000.01 added by Treasurer.
Parker Hill Reservoir (loan)	123,309 22	53,332 57	74,976 65
Police Station House, South Boston (loan)	9,123 22	7,126 99	2,001 23
Primary School House, Newbury Street (loan) . . .	40,000 00	• • • • •	40,000 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	• • • • •	10,000 00
Small-pox Hospital (loan)	35,987 96	6,744 32	29,243 64
Soldiers' Relief	149,280 36	36,931 86	112,348 50
Suffolk Street District (loans and transfer)	16,819 11	672 26	16,146 85
Ticknor Bequest (transfer)	2,060 51	• • • • •	2,060 51
Washington Street Extension (loan)	179,103 77	49,765 66	129,338 11
Water Street Grade Damages (transfer)	15,546 17	• • • • •	15,546 17
Water Works, Wards 13 to 16, and Extension to Wards 17 and 19 (loan)	60,000 00	30,813 90	29,186 10
Widening and Grading Dudley and other Streets (loan)	7,035 56	225 00	6,810 56
Widening Eliot Street (loan and transfer)	13,458 99	• • • • •	13,458 99
Widening Federal Street (loans)	1,103 03	• • • • •	1,103 03
Widening Hanover Street, No. 2 (loans)	34,570 39	• • • • •	34,570 39
Widening Warren Street (loan)	39,306 60	20,261 57	19,045 03
Widening Washington and Essex Streets (loan) . .	77,472 99	205 50	77,267 49
	\$4,478,330 53	\$1,087,822 28	\$3,394,508 26
Advanced by Treasurer	4,000 01		
	\$4,482,330 54		

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General	\$13,928,448 51	\$5,964,884 90	\$7,963,563 61
Special	4,482,330 54	1,087,822 28	3,394,508 26
	\$18,410,779 05	\$7,052,707 18	\$11,358,071 87

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1874.

TOTAL APPROPRIATIONS AND EXPENDITURES FOR EACH.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the October draft.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (loans)	\$610,000 00	\$269,602 95	\$340,397 05
Atlantic Avenue (loans)	1,600,000 00	1,503,505 82	96,494 18
Bennett Grammar School-house, Brighton (appro'n)	56,200 00	28,300 18	27,899 82
Broadway Extension (loans)	1,000,000 00	919,319 79	80,680 21
Burnt District (loans)	6,671,176 65	5,591,531 29	1,079,645 36
Canton Street Grading (loan)	118,000 00	116,774 80	1,225 20
Columbus Avenue Extension (loans)	515,000 00	493,243 94	21,756 06
Devonshire Street Extension (loans)	610,000 00	553,044 02	56,955 98
Eastern Avenue and Bridge (loan)	200,000 00	14,566 89	185,433 11
Engine and Hook & Ladder House, Ward 5 (loans) .	65,000 00	64,991 10	8 90
Engine House, Mason Street (transfer)	15,000 00	11,298 73	3,701 27
Fort Hill Improvement (loans)	1,575,000 00	1,560,885 55	14,114 45
Grammar School-house, Dudley District (loan and appropriation)	140,000 00	138,352 93	1,647 07
Grammar School-house, Ward 15 (loan and appro'n)	134,400 00	123,302 62	6,097 38
Highland Street Stable (loan and appropriation) . .	90,000 00	88,631 89	1,368 11
Holton Library Building, Brighton (appropriation) .	20,500 00	25,687 30	3,812 70
Harrison Avenue Extension (loan)	220,000 00	174,039 53	45,960 47
Hook & Ladder House, No. 4 (transfers)	33,000 00	32,978 67	21 33
Hose House, Longwood (loan)	28,000 00	27,234 44	765 56
New Lunatic Hospital (loan and appropriation) . .	148,000 00	44,955 96	103,044 04
Northampton Street District (loan and transfer) . .	205,000 00	35,058 95	169,941 05
Oliver Street (loan and revenue)	188,862 79	358,643 92	169,781 13 and 187 Trans.
Police Station House, Ward 16 (loan and appropri'n)	45,000 00	21,063 43	23,936 57
Police Station House, West Roxbury (appropriation)	22,426 00	22,394 17	31 83
Primary School-houses, East Boston (loan and appro.)	97,200 00	95,545 37	1,654 63
Parker Hill Reservoir (loan)	161,000 00	86,023 35	74,976 65
Police Station House, South Boston (loan)	45,000 00	42,998 77	2,001 23
Suffolk Street District (loan and transfer)	2,391,248 96	2,375,102 11	16,146 85
Washington Street Extension (loan)	1,760,000 00	1,630,661 89	129,338 11
Water Street Grade Damages (transfer)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley & other Streets (loans)	180,000 00	173,189 44	6,810 56
Widening Eliot Street (loan and transfer)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Hanover Street, No. 2 (loan)	803,623 58	769,053 19	34,570 39
Widening Warren Street (loan)	115,000 00	95,954 97	19,045 03
Widening Washington and Essex Streets (loan) . .	250,000 00	172,732 51	77,267 49
Amount advanced by Treasurer	\$20,937,637 98 169,781 13	\$18,450,562 28	\$2,656,856 83
	\$21,107,419 11		

City Document.—*No. 84.*

CITY OF BOSTON.



EXTENSION OF
SWETT STREET.

1874.

CITY OF BOSTON.

IN BOARD OF STREET COMMISSIONERS,

October 22, 1874.

Resolved, That the safety and convenience of the inhabitants of the city require that SWETT STREET should be widened and extended from Albany street to the junction of Boston street and Dorchester avenue in South Boston, and that the grade thereof should be established; and for that purpose it is necessary to take and lay out, as a public street or way of the said city, a parcel of land belonging to L. B. MORSE AND E. A. REMICK, bounded as follows, viz.: Eastwardly by the proposed line of widening of Swett street, on a curve of five and $\frac{6.3}{100}$ feet radius, there measuring eleven and $\frac{9.1}{100}$ feet; northeastwardly by the proposed line of widening of said street, fifty-seven feet; southeastwardly by land hereinafter described as taken from the Roxbury Grammar School, fourteen and $\frac{2.7}{100}$ feet; southwestwardly by the present line of Swett street, fifty and $\frac{8}{100}$ feet; westwardly by the same, eleven and $\frac{6.7}{100}$ feet; and northwestwardly by Albany street, eighteen and $\frac{1.3}{100}$ feet; containing eight hundred and sixteen square feet, more or less.

A parcel of land belonging to the ROXBURY GRAMMAR SCHOOL, bounded as follows, viz.: Northeastwardly by the proposed line of widening of Swett street, there measuring one hundred forty-eight and $\frac{8.5}{100}$ feet; southeastwardly by other land hereinafter described as taken from the Roxbury Grammar School, five and $\frac{9.4}{100}$ feet; southwestwardly by the present line of Swett street, one hundred and fifty-four feet;

and northwestwardly by land before described as taken from L. B. Morse and E. A. Remick, fourteen and $\frac{2.7}{100}$ feet; containing thirteen hundred and ninety square feet, more or less.

Another parcel of land belonging to the ROXBURY GRAMMAR SCHOOL, bounded as follows, viz.: Northeastwardly by the proposed line of widening of Swett street, there measuring one hundred twenty-five and $\frac{5.2}{100}$ feet; southwestwardly by the present line of Swett street, one hundred twenty-seven and $\frac{3}{100}$ feet; and northwestwardly by other land before described as taken from the Roxbury Grammar School, five and $\frac{9.4}{100}$ feet; containing three hundred and sixty-two square feet, more or less.

A parcel of land belonging to the BOSTON LEAD COMPANY, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Swett street, there measuring two hundred seventeen and $\frac{6.6}{100}$ feet; northeastwardly by the present line of Swett street, on two lines, twelve and $\frac{6.0}{100}$, and two hundred four and $\frac{6.4}{100}$ feet, respectively; and southeastwardly by land hereinafter described as taken from a person or persons unknown, ten and $\frac{7.9}{100}$ feet; containing twelve hundred and sixty-five square feet, more or less.

A parcel of land belonging to A PERSON OR PERSONS UNKNOWN, being a portion of Reed street, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Swett street, there measuring forty and $\frac{9}{100}$ feet; northwestwardly by land before described as taken from the Boston Lead Company, ten and $\frac{7.9}{100}$ feet; northeastwardly by the present line of Swett street, forty and $\frac{4}{100}$ feet; and southeastwardly by land hereinafter described as taken from John S. Laming and Alonzo S. Drisko, twelve and $\frac{6.2}{100}$ feet; containing four hundred and sixty-eight square feet, more or less.

A parcel of land belonging to JOHN S. LAMING AND ALONZO S. DRISKO, bounded as follows, viz.: Southwest-

wardly by the proposed line of widening of Swett street, there measuring two hundred sixty-eight and $\frac{2}{100}$ feet; northwestwardly by land before described as taken from a person or persons unknown, twelve and $\frac{62}{100}$ feet; northeastwardly by the present line of Swett street, two hundred sixty-seven and $\frac{50}{100}$ feet; and southeastwardly by land hereinafter described as taken from Otis Shepard, twenty-four and $\frac{80}{100}$ feet; containing five thousand and five square feet, more or less.

A parcel of land belonging to OTIS SHEPARD, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Swett street, there measuring ninety-nine and $\frac{20}{100}$ feet; northwestwardly by land before described as taken from J. S. Laming and Alonzo S. Drisko, twenty-four and $\frac{80}{100}$ feet; northeastwardly by the present line of Swett street, ninety-eight and $\frac{92}{100}$ feet; and southeastwardly by land hereinafter described as taken from a person or persons unknown, twenty-nine and $\frac{32}{100}$ feet; containing two thousand six hundred and seventy-seven square feet, more or less.

A parcel of land belonging to A PERSON OR PERSONS UNKNOWN, being a portion of Gerard street, bounded as follows, viz.: Southwestwardly by the southwesterly line of the proposed extension of Swett street, there measuring forty and $\frac{9}{100}$ feet; northwestwardly by land before described as taken from Otis Shepard, twenty-nine and $\frac{32}{100}$ feet; northeastwardly by land hereinafter described as taken from a person or persons unknown, forty and $\frac{4}{100}$ feet; and southeastwardly by land hereinafter described as taken from the Roxbury Gas Light Company, thirty and $\frac{36}{100}$ feet; containing eleven hundred and ninety-four square feet, more or less.

Another parcel of land belonging to A PERSON OR PERSONS UNKNOWN, being a portion of the unaccepted part of Swett street, bounded as follows, viz.: Northeastwardly by the

northeasterly line of the proposed extension of Swett street, there measuring nine hundred forty-seven and $\frac{5}{100}$ feet; southwardly by land hereinafter described as taken from the Central Wharf Company, twenty-four and $\frac{54}{100}$ feet; southwestwardly by the same and by land hereinafter described as taken from Joseph Dorr and others, Hiram Johnson, Lawrence Cuddy and the Roxbury Gas Light Company, nine hundred thirty-two and $\frac{54}{100}$ feet; and northwestwardly by the public portion of Swett street, thirty-one and $\frac{97}{100}$ feet; containing seventeen thousand three hundred and sixty-four square feet, more or less.

A parcel of land belonging to the ROXBURY GASLIGHT COMPANY, bounded as follows, viz.: Southwestwardly by the southwesterly line of the proposed extension of Swett street, there measuring one hundred fifty and $\frac{2}{100}$ feet; northwestwardly by land before described as taken from a person or persons unknown, thirty and $\frac{36}{100}$ feet; northeastwardly by land before described as taken from a person or persons unknown, one hundred and fifty feet; and southeastwardly by land hereinafter described as taken from Lawrence Cuddy, thirty-four and $\frac{25}{100}$ feet; containing four thousand eight hundred and forty-one square feet, more or less.

A parcel of land belonging to LAWRENCE CUDDY, bounded as follows, viz.: Southwestwardly by the southwesterly line of the proposed extension of Swett street, there measuring sixty and $\frac{8}{100}$ feet; northwestwardly by land before described as taken from the Roxbury Gaslight Company, thirty-four and $\frac{25}{100}$ feet; northeastwardly by land before described as taken from a person or persons unknown, sixty feet; and southeastwardly by land hereinafter described as taken from Hiram Johnson, thirty-five and $\frac{81}{100}$ feet; containing twenty-one hundred square feet, more or less.

A parcel of land belonging to HIRAM JOHNSON, bounded as follows, viz.: Southwestwardly by the southwesterly line of

the proposed extension of Swett street, there measuring two hundred forty-five and $\frac{23}{100}$ feet; northwestwardly by land before described as taken from Lawrence Cuddy, thirty-five and $\frac{81}{100}$ feet; northeastwardly by land before described as taken from a person or persons unknown, one hundred and ninety-seven feet; and eastwardly by land hereinafter described as taken from Joseph Dorr and others, sixty-five and $\frac{14}{100}$ feet; containing eight thousand five hundred and twenty-nine square feet, more or less.

A parcel of land belonging to JOSEPH DORR AND OTHERS, bounded as follows, viz.: Southwestwardly by the southwesterly line of the proposed extension of Swett street, there measuring twenty-two and $\frac{85}{100}$ feet; westwardly by land before described as taken from Hiram Johnson, sixty-five and $\frac{14}{100}$ feet; northeastwardly by land before described as taken from a person or persons unknown, seventy-one feet; and southeastwardly by land hereinafter described as taken from the Central Wharf Company, forty-two and $\frac{73}{100}$ feet; containing nineteen hundred and eighty-two square feet, more or less.

A parcel of land belonging to the CENTRAL WHARF COMPANY, bounded as follows, viz.: Southwestwardly by the southwesterly line of the proposed extension of Swett street, there measuring four hundred sixty-nine and $\frac{96}{100}$ feet; northwestwardly by land before described as taken from Joseph Dorr and others, forty-two and $\frac{73}{100}$ feet; northeastwardly by land before described as taken from a person or persons unknown, four hundred fourteen and $\frac{50}{100}$ feet; northwardly by the same, twenty-four and $\frac{54}{100}$ feet; northeastwardly by the northeasterly line of said proposed extension of Swett street, thirty and $\frac{40}{100}$ feet; and southeastwardly by land hereinafter described as taken from R. A. Ballou and others, sixty and $\frac{15}{100}$ feet; containing twenty-three thousand one hundred and thirty square feet, more or less.

A parcel of land belonging to R. A. BALLOU, ALBERT A.

COBB, J. W. CANDLER AND MARY R. COBB, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring three hundred eighty-six and $\frac{4.9}{100}$ feet; eastwardly by land hereinafter described as taken from the heirs of Martin Brimmer, eighteen and $\frac{3.9}{100}$ feet; southeastwardly by the same, forty-seven feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, three hundred ninety-five and $\frac{2.7}{100}$ feet; and northwestwardly by land before described as taken from the Central Wharf Company, sixty and $\frac{1.5}{100}$ feet; containing twenty-three thousand seven hundred and fifty-eight square feet, more or less.

A parcel of land belonging to the HEIRS OF MARTIN BRIMMER, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring two hundred fifty-one and $\frac{4.7}{100}$ feet; eastwardly by land hereinafter described as taken from William L. Bradley, sixty-seven and $\frac{6.0}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, two hundred sixty-nine and $\frac{6.2}{100}$ feet; northwestwardly by land before described as taken from R. A. Ballou and others, forty-seven feet; and westwardly by the same, eighteen and $\frac{3.9}{100}$ feet; containing fifteen thousand three hundred and twenty-seven square feet, more or less.

A parcel of land belonging to WILLIAM L. BRADLEY, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring two hundred ninety-two and $\frac{1.3}{100}$ feet; southeastwardly by land hereinafter described as taken from the South Cove Corporation, fifty-three and $\frac{6}{100}$ feet; southwestwardly by land hereinafter described as taken from R. A. Ballou and others, two hundred twenty-four and $\frac{9.8}{100}$ feet, and by the southwesterly line of said proposed extension of Swett street, thirty-seven and $\frac{7.3}{100}$ feet; and westwardly by land of the heirs of Martin Brimmer, and by land before described as

taken from the said heirs, sixty-eight and $\frac{92}{100}$ feet; containing fifteen thousand nine hundred and four square feet, more or less.

A parcel of land belonging to R. A. BALLOU AND OTHERS, bounded as follows, viz.: Northeastwardly by land before described as taken from William L. Bradley, there measuring two hundred twenty-four and $\frac{98}{100}$ feet; southeastwardly by land hereinafter described as taken from the South Cove Corporation, six and $\frac{99}{100}$ feet; and southwestwardly by the southwesterly line of said proposed extension of Swett street, two hundred twenty-five and $\frac{17}{100}$ feet; containing seven hundred and eighty-seven square feet, more or less.

A parcel of land belonging to the SOUTH COVE CORPORATION, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring one hundred eighty-nine and $\frac{80}{100}$ feet; eastwardly by land hereinafter described as taken from George W. Tuxbury, twenty-two and $\frac{99}{100}$ feet; southeastwardly by the same, forty-one and $\frac{9}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, one hundred ninety-nine and $\frac{30}{100}$ feet; and northwestwardly by land before described as taken from R. A. Ballou and others and from William L. Bradley, sixty and $\frac{5}{100}$ feet; containing eleven thousand eight hundred and eighty-six square feet, more or less.

A parcel of land belonging to GEORGE W. TUXBURY, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring one hundred fifty-one and $\frac{48}{100}$ feet; southeastwardly by land hereinafter described as taken from unknown owners, twenty-two and $\frac{52}{100}$ feet; southwardly by land hereinafter described as taken from the South Cove Corporation, sixty-two and $\frac{4}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, eighty-six and $\frac{34}{100}$ feet; northwestwardly by land before described as taken from the South Cove Corporation, forty-

one and $\frac{9}{100}$ feet; and westwardly by the same, twenty-two and $\frac{99}{100}$ feet; containing seventy-three hundred and ninety-three square feet, more or less.

A parcel of land belonging to the SOUTH COVE CORPORATION, bounded as follows, viz.: Northwardly by land before described as taken from George W. Tuxbury, there measuring sixty-two and $\frac{4}{100}$ feet; southeastwardly by land hereinafter described as taken from unknown owners, thirty-eight and $\frac{43}{100}$ feet; and southwestwardly by the southwesterly line of said proposed extension of Swett street, forty-two and $\frac{42}{100}$ feet; containing eight hundred and three square feet, more or less.

A parcel of land belonging to A PERSON OR PERSONS UNKNOWN, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring twenty-four and $\frac{87}{100}$ feet; southwardly by other land hereinafter described as taken from unknown owners, thirty-six and $\frac{37}{100}$ feet; and northwestwardly by land before described as taken from George W. Tuxbury, twenty-two and $\frac{52}{100}$ feet; containing two hundred and seventy-six square feet, more or less.

Another parcel of land belonging to A PERSON OR PERSONS UNKNOWN, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring fifty-eight and $\frac{93}{100}$ feet; southeastwardly by land hereinafter described as taken from the South Cove Corporation, sixty and $\frac{95}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, eighty-three and $\frac{80}{100}$ feet; northwestwardly by land before described as taken from the South Cove Corporation, thirty-eight and $\frac{43}{100}$ feet; and northwardly by other land before described as taken from unknown owners, thirty-six and $\frac{37}{100}$ feet; containing forty-seven hundred and fifty-two square feet, more or less.

A parcel of land belonging to the SOUTH COVE CORPORATION

TION, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring two hundred sixty-five and $\frac{83}{100}$ feet; southwardly by land hereinafter described as taken from Shebna Rich, ninety-eight and $\frac{41}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, one hundred ninety-eight and $\frac{54}{100}$ feet; and northwestwardly by land before described as taken from unknown owners, sixty and $\frac{95}{100}$ feet; containing thirteen thousand nine hundred and thirty-one square feet, more or less.

A parcel of land belonging to SHEBNAH RICH, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring three hundred twenty-nine and $\frac{22}{100}$ feet; eastwardly by land hereinafter described as taken from Martin Hayes, eighty-eight and $\frac{92}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, four hundred seventy-two and $\frac{86}{100}$ feet; and northwardly by land before described as taken from the South Cove Corporation, ninety-eight and $\frac{41}{100}$ feet; containing twenty-four thousand and sixty-two square feet, more or less.

A parcel of land belonging to MARTIN HAYES, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring two hundred twenty-six and $\frac{55}{100}$ feet; southeastwardly by land hereinafter described as taken from the heirs of Lemuel Crehore, five and $\frac{79}{100}$ feet; eastwardly by the same, thirty-three feet and forty and $\frac{9}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, two hundred nine and $\frac{69}{100}$ feet; and westwardly by land before described as taken from Shebna Rich, eighty-eight and $\frac{92}{100}$ feet; containing twelve thousand eight hundred and eleven square feet, more or less.

A parcel of land belonging to the HEIRS OF LEMUEL CREHORE, bounded as follows, viz.: Northeastwardly by the

northeasterly line of the proposed extension of Swett street, there measuring one hundred seventeen and $\frac{10}{100}$ feet; southwardly by land hereinafter described as taken from unknown owners, seventy-one and $\frac{49}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, twenty-nine and $\frac{47}{100}$ feet; westwardly by land before described as taken from Martin Hayes, forty and $\frac{9}{100}$ feet and thirty-three feet; and northwestwardly by the same, five and $\frac{79}{100}$ feet; containing forty-six hundred and seventy-three square feet, more or less.

A parcel of land belonging to A PERSON OR PERSONS UNKNOWN, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring nineteen and $\frac{66}{100}$ feet; southwardly by land hereinafter described as taken from Benjamin F. Wing, seventy-one and $\frac{49}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, nineteen and $\frac{66}{100}$ feet; and northwardly by land before described as taken from the heirs of Lemuel Crehore, seventy-one and $\frac{49}{100}$ feet; containing eleven hundred and eighty square feet, more or less.

A parcel of land belonging to BENJAMIN F. WING, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring three hundred seventeen and $\frac{77}{100}$ feet; southeastwardly by land hereinafter described as taken from Samuel Jordan and Charles H. and Francis C. Hersey, sixty-two and $\frac{9}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, three hundred seventy-two and $\frac{99}{100}$ feet; and northwardly by land before described as taken from unknown owners, seventy-one and $\frac{49}{100}$ feet; containing twenty thousand seven hundred and twenty-three square feet, more or less.

A parcel of land belonging to SAMUEL JORDAN, bounded as follows, viz.: Northeastwardly by the northeasterly line

of the proposed extension of Swett street, there measuring one hundred twenty-nine and $\frac{5}{10}$ feet; southeastwardly by land hereinafter described as taken from unknown owners, one and $\frac{6}{10}$ feet; southwestwardly by land hereinafter described as taken from Charles H. and Francis C. Hersey, one hundred and twenty-five feet; and northwestwardly by land before described as taken from Benjamin F. Wing, thirty-six and $\frac{5}{10}$ feet; containing twenty-three hundred and fifty-three square feet, more or less.

A parcel of land belonging to CHARLES H. AND FRANCIS C. HERSEY, bounded as follows, viz.: Northeastwardly by land before described as taken from Samuel Jordan, there measuring one hundred and twenty-five feet; southeastwardly by land hereinafter described as taken from unknown owners, forty feet; southwestwardly by land hereinafter described as taken from Nathaniel C. Decker, seventy-four and $\frac{3}{10}$ feet, and by the southwesterly line of said proposed extension of Swett street, fifty-two and $\frac{5}{10}$ feet; and northwestwardly by land before described as taken from Benjamin F. Wing, twenty-five and $\frac{6}{10}$ feet; containing forty-six hundred and thirty-five square feet, more or less.

A parcel of land belonging to NATHANIEL C. DECKER, bounded as follows, viz.: Northeastwardly by land before described as taken from Charles H. and Francis C. Hersey, there measuring seventy-four and $\frac{3}{10}$ feet; southeastwardly by land hereinafter described as taken from unknown owners, twenty-one and $\frac{1}{10}$ feet; and southwestwardly by the southwesterly line of the proposed extension of Swett street, seventy-seven and $\frac{4}{10}$ feet; containing seven hundred and eighty-five square feet, more or less.

A parcel of land belonging to A PERSON OR PERSONS UNKNOWN (being part of a private way called Ellery street), bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring thirty-one and $\frac{1}{10}$ feet; southeastwardly by land

hereinafter described as taken from David H. Geer and the Boylston National Bank, sixty-two and $\frac{1.9}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, thirty-one and $\frac{1.0}{100}$ feet; and northwestwardly by land before described as taken from Nathaniel C. Decker, Charles H. and Francis C. Hersey and Samuel Jordan, sixty-two and $\frac{1.9}{100}$ feet; containing eighteen hundred and sixty-six square feet, more or less.

A parcel of land belonging to DAVID H. GEER, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring one hundred five and $\frac{9}{100}$ feet; southwestwardly by land hereinafter described as taken from the Boylston National Bank, one hundred one and $\frac{3.9}{100}$ feet; and northwestwardly by land before described as taken from unknown owners, twenty-eight and $\frac{7.5}{100}$ feet; containing fourteen hundred and fifty-seven square feet, more or less.

A parcel of land belonging to the BOYLSTON NATIONAL BANK, bounded as follows, viz.: Northeastwardly by land before described as taken from David H. Geer, and by the northeasterly line of the proposed extension of Swett street, there measuring, respectively, one hundred one and $\frac{3.9}{100}$ feet, and forty-seven and $\frac{6.7}{100}$ feet; southeastwardly by land hereinafter described as taken from Thomas Gogin and Alpheus M. Stetson, sixty and $\frac{1.4}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, one hundred forty and $\frac{5.6}{100}$ feet; and northwestwardly by land before described as taken from unknown owners, thirty-three and $\frac{4.4}{100}$ feet; containing seventy-three hundred and forty-three square feet, more or less.

A parcel of land belonging to THOMAS GOGIN, bounded as follows, viz.: Northeastwardly by the northeasterly line of the proposed extension of Swett street, there measuring fifty and $\frac{6.2}{100}$ feet, and, upon a curve of one hundred five and $\frac{1.7}{100}$ feet radius, twenty and $\frac{1.8}{100}$ feet; southeastwardly by

land hereinafter described as taken from William Hardy, nineteen feet; southwestwardly by land hereinafter described as taken from Alpheus M. Stetson, seventy and $\frac{76}{100}$ feet; and northwestwardly by land before described as taken from the Boylston National Bank, twenty-two and $\frac{68}{100}$ feet; containing fourteen hundred and twenty-one square feet, more or less.

A parcel of land belonging to ALPHEUS M. STETSON, bounded as follows, viz.: Northeastwardly by land before described as taken from Thomas Gogin, and by land hereinafter described as taken from William Hardy, there measuring one hundred forty and $\frac{76}{100}$ feet; southeastwardly by Boston street, ninety-six and $\frac{14}{100}$ feet; westwardly by the westerly line of the proposed extension of Swett street, on a curve of twenty-three and $\frac{41}{100}$ feet radius, twenty-three and $\frac{89}{100}$ feet; southwestwardly by the southwesterly line of said proposed extension of Swett street, on a curve of one hundred five and $\frac{17}{100}$ feet radius, seventy-four and $\frac{34}{100}$ feet; again southwestwardly by the southwesterly line of said proposed extension, forty-six and $\frac{43}{100}$ feet; and northwestwardly by land before described as taken from the Boylston National Bank, thirty-seven and $\frac{46}{100}$ feet; containing sixty-seven hundred and thirty square feet, more or less.

A parcel of land belonging to WILLIAM HARDY, bounded as follows, viz.: Northwardly by the northerly line of the proposed extension of Swett street, there measuring, on a curve of one hundred five and $\frac{17}{100}$ feet radius, forty-eight and $\frac{3}{100}$ feet; northeastwardly by land hereinafter described as taken from Thomas Gogin, thirty-three and $\frac{38}{100}$ feet; southeastwardly by Boston street, thirty-six and $\frac{6}{100}$ feet; southwestwardly by land before described as taken from Alpheus M. Stetson, seventy feet; and northwestwardly by land before described as taken from Thomas Gogin, nineteen feet; containing twenty-one hundred and fifty-one square feet, more or less.

A parcel of land belonging to THOMAS GOGIN, bounded as follows, viz. : Northwardly by the northerly line of the proposed extension of Swett street, there measuring eleven and $\frac{9.5}{100}$ feet, on a curve of one hundred five and $\frac{17}{100}$ feet radius, and four and $\frac{74}{100}$ feet; northeastwardly by land hereinafter described as taken from Christina Kammerer, twenty-two and $\frac{42}{100}$ feet; southeastwardly by Boston street, ten and $\frac{33}{100}$ feet; and southwestwardly by land before described as taken from William Hardy, thirty-three and $\frac{38}{100}$ feet; containing two hundred and seventy-seven square feet, more or less.

A parcel of land belonging to CHRISTINA KAMMERER, bounded as follows, viz. : Northwardly by the northerly line of the proposed extension of Swett street, there measuring thirty-five and $\frac{92}{100}$ feet; southeastwardly by Boston street, twenty-three and $\frac{32}{100}$ feet; and southwestwardly by land before described as taken from Thomas Gogin, twenty-two and $\frac{42}{100}$ feet; containing two hundred and fifty-four square feet, more or less.

AND WHEREAS due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, It is THEREFORE ORDERED, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, and the grade of said extension of Swett street is established, according to a plan of the said widening and extension and profile of the grade, made by T. W. Davis, City Surveyor, dated June 13th, 1874, and deposited in his office. And this Board doth adjudge that the expense of widening and extending the said Swett street, as aforesaid, will amount to one hundred seventeen thousand five hundred forty and $\frac{4}{100}$ dollars, and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

EXTENSION OF SWETT STREET

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Estimate of Damages Occasioned by the Extension of Swett Street, 1874.

ESTATES.	Description.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before widening or extending.	Value of buildings after widening or extending.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.	Remarks.
L. B. Morse and E. A. Remick		816	\$3 00	\$2,448 00	\$3,000 00	\$1,500 00		\$2,000 00	4,448 00	
Roxbury Grammar School		1,390	1 50	2,085 00					2,085 00	
Roxbury Grammar School		362	1 25	452 50					452 50	
Boston Lead Company		1,265	1 50	1,897 50				1,200 00	3,097 50	
Person, or Persons, Unknown	Reed street.	468								
J. S. Laming and Alonzo S. Drisko		5,005	1 25	6,256 25	12,000 00	4,000 00		9,000 00	15,256 25	
Otis Shepard		2,677	1 25	3,346 25	4,000 00	2,250 00		2,000 00	5,346 25	
Person, or Persons, Unknown	Gerard street.	1,194								
Person, or Persons, Unknown	Portion of Swett street.	17,364								
Roxbury Gas Light Company		4,841	90	4,356 90					4,356 90	
Lawrence Cuddy		2,100	1 00	2,100 00	3,000 00			3,000 00	5,100 00	
Hiram Johnson		8,629	45	3,883 05					3,883 05	

Estimate of Damages, etc. — Continued.

ESTATES.	Description.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of build- ings before widening or extending.	Value of build- ings after widening or extending.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.	Remarks.
Joseph Dorr and others		1,982	60	1,189 20	.....	.....	.....	.....	1,189 20	
Central Wharf Com- pany		23,130	40	9,252 00	.....	.....	.....	200 00	9,452 00	
R. A. Ballou and others		23,758	37	8,790 46	.....	.....	.....	300 00	9,090 46	
Heirs of Martin Brim- mer		15,327	33	5,057 91	.....	.....	.....	.....	5,057 91	
William L. Bradley		15,904	60	9,542 40	.....	.....	.....	600 00	10,142 40	
R. A. Ballou and others		787	25	196 75	.....	.....	.....	.....	196 75	
South Cove Corporation		11,886	05	594 30	.....	.....	.....	.....	594 30	
George W. Tuxbury		7,393	05	389 65	.....	.....	.....	.....	389 65	
South Cove Corporation		803	05	40 15	.....	.....	.....	.....	40 15	
Person, or Persons, Un- known		276	.....	.....	.....	.....	.....	.....	.....	
Person, or Persons, Un- known		4,752	.....	.....	.....	.....	.....	.....	.....	
South Cove Corporation		13,931	05	696 55	.....	.....	.....	.....	696 55	
Shebnah Rich		24,062	06	1,443 72	.....	.....	.....	.....	1,443 72	
Martin Hayes		12,811	06	768 66	.....	.....	.....	.....	768 66	

Heirs of Lemuel Crehore	4,673	06	280 38								280 38
Person, or Persons, Un- known	1,180										
Benjamin F. Wing	20,723	12	2,486 76								2,486 76
Samuel Jordan	2,353	50	1,176 50	3,700 00					2,000 00		3,176 50
Charles H. and Francis C. Hersey	4,635	50	2,317 50	4,500 00					3,000 00		5,317 50
Nathaniel C. Decker	785	60	471 00	2,300 00					1,600 00		2,071 00
Person, or Persons, Un- known	1,866										
David H. Geer, ...	1,457	60	874 20								874 20
Boylston National Bank	7,343	50	3,671 50								3,671 50
Thomas Gogin	1,421	50	710 50								710 50
Alpheus M. Stetson	6,730	80	5,384 00	8,000 00	5,000 00				3,500 00		8,884 00
William Hardy	2,151	1 00	2,151 00	3,000 00					1,800 00		3,951 00
Thomas Gogin	277	1 00	277 00								277 00
Christina Kammerer	254	1 25	317 50	5,000 00	3,000 00				2,500 00		2,817 50
Totals	258,661		\$84,840 04	\$48,500 00	\$15,750 00				\$32,700 00		\$117,540 04

City Document.—No. 85.

CITY OF BOSTON.



REPORT

OF THE

Joint Standing Committee on Water,

TOGETHER WITH THE

REPORT OF THE CITY ENGINEER

IN REPLY TO

ORDERS OF THE CITY COUNCIL PERTAINING TO AN IN-
CREASED SUPPLY OF WATER FROM THE COCHIT-
UATE AND MYSTIC LAKES COMBINED,
AND AN ADDITIONAL SUPPLY FROM

CHARLES RIVER.

REPORT OF COMMITTEE ON WATER.

CITY OF BOSTON.

IN COMMON COUNCIL, 26th October, 1874.

The Joint Standing Committee on Water Department, who were requested —

First — To ascertain and report whether the present source of our water supply from Lake Cochituate and Mystic lake, combined, can be so utilized as to give an adequate water supply to the city in a season of drought, how great that supply would be, for how many years it would be adequate, and the expense of procuring it;

Second — To examine the Charles river and report upon its availability as a source of supply, and the expense of conveying the waters to Chestnut-hill reservoir, —

Beg leave to submit herewith the reports of the City Engineer and his assistants, giving full and complete information upon all the points covered by the orders of the City Council.

The yield in a dry year from the Cochituate and Mystic sources, after making improvements and additions to the works at an estimated cost of \$1,342,032, is estimated at 33,000,000 gallons daily. Assuming from past experience that the future increase of consumption will be at the rate of seven per cent. yearly, the supply would be fully used in 1877. The yield in an ordinary year from the two sources would be from thirty-six to thirty-nine millions of gallons daily, which would meet the estimated consumption in 1878 or 1879.

Five schemes of works for obtaining a supply of fifty million gallons daily from Charles river are given, with esti-

mates of the cost of each. (See pp. 33 to 37 Engineer's report.) The report of the Commission (which will be submitted in a few days) upon the purity of the different sources of supply will be of great value in determining the point where it would be safe to take a supply from Charles river.

In considering this question of a permanent water supply it should be borne in mind that the plans for the Sudbury-river scheme have been prepared at great expense, and that the work can be prosecuted energetically and without interruption as soon as the necessary authority to take lands is given. If the authority asked for had been granted last year, at least a third of the work on the proposed line of the Sudbury conduit would have been completed. If any other scheme is adopted, it will take another year to obtain the necessary legislation, and a long additional delay for the preparation of new plans.

In view of the unusually low state of the water both in the Cochituate and Mystic basins, caused by the absence of the ordinary fall rains and the great increase in the number of water-takers during the present year (nearly two thousand on the Cochituate service alone), making the consumption at the present time twenty million gallons per diem from that source of supply, your committee again urge upon the City Council the importance of immediate action to provide an additional supply of water adequate to meet the wants of the city. The water in the Chestnut-hill reservoirs this morning was five feet below high-water level, being the lowest point ever reached; and the water in the Cochituate lake was six feet seven inches below high-water mark. Unless we have copious rains during the next few days, the lake will be so reduced as to require the aid of steam pumps to raise the water to the flow line of the conduit, or the opening of the gates from the temporary connection made in 1872 with Sudbury river. The Cochituate Water Board decline to adopt the latter alternative without authority from

the City Council, because of the personal liability which would follow such action. It will be remembered that the property of the members of the Water Board of 1872 is now under attachment for a similar taking of the Sudbury water during the drought of 1872. Your committee are informed that Mystic lake is, at the present time, about three feet six inches lower than at this date last year.

It will be noticed in the report of Mr. Fteley, that a plan is presented for diverting the water of Pegan brook, in the town of Natick. The pollution of Lake Cochituate from this source, although inconsiderable, has always been a source of anxiety to the Water Board, and, for reasons set forth by the State Board of Health and by Mr. Fteley, it would seem desirable to remove this pollution at once. A portion of the expense should, however, be borne by the town of Natick, and your committee would recommend the passage of the accompanying order authorizing the Mayor to petition the Legislature, at its next session, for authority to be given to the city of Boston and the town of Natick to construct a sewer for that purpose.

The committee would also call attention to the fact that the conduit from the lake has been for the past month run under a pressure to keep up the supply, and must be closed for a short time during the next few days for the purpose of making necessary repairs before cold weather.

In conclusion, the committee urge upon citizens generally the necessity of using water with great caution, that the supply may be eked out until heavy rainfalls again fill the lake.

For the Committee,

S. B. STEBBINS,

Chairman on the part of the Board of Aldermen.

FREDERICK PEASE,

Chairman on the part of Common Council.

Ordered, That his Honor the Mayor be and he is hereby requested to petition the General Court, at its next session, for the passage of an act to authorize the city of Boston and the town of Natick to construct a sewer for the purpose of diverting the waters of Pegan brook from Lake Cochituate; the expense to be assessed in equitable proportions upon said city and town.

REPORT OF CITY ENGINEER.

OFFICE OF THE CITY ENGINEER,
CITY HALL, BOSTON, Oct. 10, 1874.

ALDERMAN S. B. STEBBINS,

Chairman Joint Standing Committee on the Water Department: —

SIR: The orders of the City Council relating to an additional supply of water, passed June 15 and June 29, were referred to me by your committee about three months ago.

Since then my time has been so fully occupied with other work that it has been impossible for me to give that attention to the investigations required by the orders which their importance demanded, therefore I have had them made, under the direction of Mr. A. Fteley, Resident Engineer in charge of additional supply, and Mr. D. W. Cunningham, First Assistant under him.

Mr. Fteley has had in charge the examinations made to ascertain what may be done to increase the supply from Lake Cochituate, and to determine the value and capacity of Charles river as a source of supply for this city, also the experiments made to ascertain the volume of overflow at the dam and conduit of Mystic lake. Mr. Cunningham has had under his direction the surveys of the Mystic valley made to determine the capacity of available storage, its character and cost, and the probable available yield of the whole valley in a season of drought.

Their reports, which give the results of very careful investigations, are appended.

Before discussing the subjects of the orders, I desire to call attention to two positions which have been maintained in former reports upon the matter of additional water supply.

The first is, that the true value of a source of supply is measured by its yield in seasons of drought.

The second, that in this region it is not safe to assume that more than twelve inches in depth of rain can be collected in a very dry year from drainage areas of the character of those with which we are dealing.

The first proposition seems self-evident; it certainly has been sufficiently proved by experience. In Appendix I, City Doc. No. 38, 1874, will be found much valuable testimony on this point. It is there shown that some eighteen or twenty cities and towns in England, depending upon supplies from small rivers requiring the storage of water for use in the summer season, were caused great inconvenience or distress by the drought of 1868. In some instances the supply for manufacturing uses was entirely cut off, and in one case the consumption was limited to seven gallons per head per day, the use of water for baths, etc., being prohibited.

The capacities of the various sources had originally been very much overestimated, — the estimates being based upon *average* rainfall and percentages of yield, instead of upon minimum quantities.

Many of these cities were favorably circumstanced, and did not suffer so great distress as would cities in this country under a like failure of supply.

In England it is the custom to reserve a certain portion of the flow of the rivers, as one-third or one-fourth, for the use of the mills, and by arrangement with the mill-owners some of the cities kept up a partial supply to the inhabitants by drawing upon this reserved portion.

The testimony of engineers before the royal commission of 1868 was very direct and emphatic on this question. Mr. John Taylor, in a report to the commission, uses this lan-

guage: "The general conclusions to be drawn from the data I have given in the preceding pages respecting the largest gravitation water supplies in this country, are as follows:—

"That none of the works alluded to have completely fulfilled the anticipated results.

"Manchester and Glasgow are favorable examples of gravitation works, but exhibit signs of deficiency when tested for cycles of dry years; and of the *five* large towns alluded to, *four* have already erected, or are erecting, pumping-works in aid of the gravitation supplies. . . .

"Thus it appears that basing calculations on *average* falls of rain is erroneous; the *minimum* quantities only should be depended upon. . . .

"The axiom in mechanics, that the strength of a beam is the strength of its weakest part, applies also to gravitation water works, their real strength or power of supply being only the *minimum quantity they may be reduced to.*"

The experience of Boston and other American cities in 1871, — a year of partial drouth, — and of some English cities this season, is corroborative of the accuracy of the above statements.

It should be borne in mind that it is not necessary for the drought to actually occur before a city shall suffer from the evil effects of overtaking its source of water supply, as the mere feeling in a community that the supply is liable to run short, under any probable circumstances, works great injury to its interests, more particularly to the development of its manufactures.

For the past few years the Cochituate Water Board has felt compelled to deny the use of water for many purposes, especially for motive power, which use not only would have added to the general prosperity of the city, but also would have largely increased the water revenue.

The second position has been discussed in City Doc. No.

29, 1873, pages 9-12, and City Doc. No. 38, 1874, pages 4-5.

On page 36 of the last annual report of the Water Board will be found a table giving the percentages of rainfall which have been collected from the Cochituate district for a long term of years. It has been stated that those given for a few years preceding 1863 are considerably too large, owing to the use of an inaccurate method of obtaining the volume of flow in the conduit; hence they will not be considered.

While the percentage sometimes falls as low as 33 and 35, the average from 1862 to 1873, a term of eleven years, is 40, and careful experiments at other points have verified these figures. The result is for years of *average* rainfall; it would seem, therefore, a well-established fact that the percentage of rainfall collectable in a *dry* year cannot be safely assumed as *greater* than 40.

The rain records of Boston, Cambridge, Lowell, and other places, show that in a season of great drought the rainfall is not more than 30 inches. Thus in 1846 the rainfall

In Boston was 29.95 inches.

“ Waltham “ 26.90 “

“ Lowell “ 28.03 “

“ Cambridge “ 30.37 “

“ Providence “ 30.51 “

The rain record of Lowell shows the following years of small rainfall, during a term of twenty-two years previous to 1847:—

In 1825 the rainfall at Lowell was 28.46 inches.

“ 1826 “ “ “ “ “ 32.49 “

“ 1834 “ “ “ “ “ 31.78 “

“ 1835 “ “ “ “ “ 32.42 “

“ 1836 “ “ “ “ “ 35.53 “

“ 1837 “ “ “ “ “ 30.86 “

In 1838 the rainfall at Lowell was 37.52 inches.

“ 1839 “ “ “ “ “ 38.21 “

“ 1840 “ “ “ “ “ 38.70 “

“ 1846 “ “ “ “ “ 28.03 “

The record of Providence gives the following consecutive series of dry years : —

In 1832 the rainfall at Providence was 39.46 inches.

“ 1833 “ “ “ “ “ 33.44 “

“ 1834 “ “ “ “ “ 41.92 “

“ 1835 “ “ “ “ “ 30.96 “

“ 1836 “ “ “ “ “ 37.87 “

“ 1837 “ “ “ “ “ 31.62 “

“ 1838 “ “ “ “ “ 37.88 “

“ 1839 “ “ “ “ “ 36.75 “

In 1822 the rainfall in Boston was 27.20 inches.

“ 1828 “ “ “ “ “ 32.41 “

“ 1837 “ “ “ “ “ 33.52 “

It will be seen that a rainfall of from 27 to 33 inches is no uncommon occurrence, and that cycles of from two to five dry years do have place. It will also be noticed that a year of very low rainfall may be preceded by a number of years of drought ; thus, the low rainfall of 1837 in Lowell was preceded by three years in which the average rainfall was only 33.24 inches.

If from a rainfall of 30 inches 40 per cent. may be collected, there will be 12 inches available for a supply. This assumes that the losses from evaporation, vegetable absorption, etc., are no greater in a dry than in an average year.

In 1871, with a rainfall of about 42 inches, 13 inches (31 per cent.) were collected from the Mystic district.* (See Mr. Fteley's report, Appendix C.)

* The rainfall for this district has been taken at the average of the records for 1871, of Cambridge, Waltham, and Boston. If the Cambridge record alone be assumed as the more likely to be characteristic of the district, then the percentage will be 31 8-10.

On the Cochituate district the rainfall was 45.4 inches, of which a little over 33 per cent. was collected; should the same percentage obtain with a rainfall of 30 inches, the equivalent for the quantity available for a supply would be 10 inches only.

With such facts before us, it will not be wise to assume that more than 12 inches of rain can be collected for use in a season of great drought.

The following estimates of the quantity of water which the various water-sheds herein considered will yield, are for a very dry year, as required by the terms of the order of June 15. The average yield for a long series of years will usually be about one-third greater, but will vary very widely from year to year, and will be largely dependent upon the quantity of storage.

LAKE COCHITUATE.

In 1861, Dudley pond was connected with Lake Cochituate by an 18-inch pipe laid through the dividing ridge, and an area of about 544 acres was thus united to the watershed of the lake, and an area of 81 acres to its water-surface.

These areas are not used in computing the tables of available yield of the lake district given in the annual report, because the overflow is carried to the Sudbury river by an independent channel, and no measurement is made of it, and because it has not drawn upon every year; on the other hand, no deduction is made from the water-shed for water-surfaces.

In determining the yield in a season of drought, however, it is necessary that Dudley pond and its water-shed should be taken into account.

The total area from which the Cochituate supply is derived is:—

Area of the lake district	.	.	12,077 acres.
“ “ Dudley pond district	.	.	544 “
Total	.	.	12,621 “

REPORT OF CITY ENGINEER.

The area of water-surfaces, when the lake and ponds are full, is : —

Area of Lake Cochituate	.	.	.	801 acres.
“ Dug pond	.	.	.	45 “
“ Dudley pond	.	.	.	81 “
“ Shakum and Gleason's ponds	.	.	.	104 “
Total	.	.	.	1,031 “

Area of water-shed exclusive of water-surfaces 11,590 acres.

In a season of drought the ponds will be drawn down much below high-water level, and, judging from the experience of 1871, will not present a water-surface exceeding 800 acres, as an average. In such a season, therefore, the available water-shed will be about 11,820 acres, or 18.47 square miles.

The available storage capacity is as follows : —

Lake Cochituate	.	.	.	2,000,000,000 galls.
Dug pond	.	.	.	150,000,000 “
Dudley pond	.	.	.	250,500,000 “
Total	.	.	.	2,400,000,000 “

The following calculations will give the minimum daily supply for a year. Twelve inches in depth upon 18.47 square miles = 10,552,000 gallons per day.

To make this available there is required a storage capacity of 1,266,240,000 gallons. The actual storage capacity is in excess of this by 1,133,760,000 gallons, and will yield a daily supply of 3,100,000 gallons; then total daily yield = $10,552,000 + 3,100,000 = 13,652,000$ gallons.

This assumes that the ponds or storage basins are full at the beginning of the dry year, and such would be the case if the consumption for the year preceding the dry one were not allowed to exceed the above average of 13,652,000 gal-

lons per day. If, however, the city were using fifteen or sixteen million gallons per day it is very possible the basins might be quite or nearly empty at the beginning of the dry year, and in such case the supply for that year would be reduced to eleven or twelve millions.

The experience of this city in 1871 illustrates this point, and also shows the danger to which a city is exposed when its daily consumption is in excess of the minimum yield of its source of supply.

At the beginning of 1870 the lake was full. The consumption for that year was 15,000,000 gallons daily, and completely exhausted the storage, there being no water in the lake in January, 1871, above the proper flow-line of the conduit.

This latter year was one of partial drought, owing to light summer rains (the total rainfall was 45.39 inches), and an average daily flow through the conduit of 14,300,000 gallons required the use of pumps at the lake to draw water from below its flow-line, the natural yield having been only 13,623,000 gallons daily.

It will be noticed that this yield is almost exactly the yield estimated above for the season of extreme drought, and as the former obtained with a rainfall of 45.39 inches, it might be thought that the latter is an overestimate for a fall of only 30 inches. As just explained, the small supply in 1871 was chiefly due to overtaking the source the previous year, and only partially to a low available rainfall; had the consumption in 1870 been within the estimated least supply, there would have been available for the following year, without pumping, a daily supply of $14\frac{3}{4}$ million gallons.

The estimated least yield of the district now contributing to Lake Cochituate is, then, in round numbers $13\frac{1}{2}$ million gallons daily; but even this quantity will need to be reduced within a brief period, as the town of Natick is now building works to take a supply for domestic use from Dug pond, —

one of the storage basins of the lake district, — and the drainage from that town through Pegan brook, is becoming of a character and an amount that will soon require it to be diverted from the lake.

The question of the sewerage of Natick is discussed in the first report of Mr. Fteley (see Appendix A). He estimates that to secure the purity of the lake water, the drainage from 670 acres of the Cochituate water-shed must be diverted into the Charles river.

As the use of Dug pond by Natick will destroy its value to the city as a storage basin to be drawn upon in a dry season, there are two losses that will in a short time make themselves felt, — first, 670 acres of water-shed; second, 150 million gallons of storage capacity. There is still a third loss, namely, the amount of water consumed by Natick; but this for a number of years will be too small to be taken into account.

The daily supply in a dry year, estimated from the watershed and storage capacity reduced as above indicated, is 12,800,000 gallons.

The next question to be considered is, What can be done to increase the supply from the lake?

This is treated in detail in Mr. Fteley's report, from which it appears that, first, the lake may be raised two feet, provided legislative authority can be secured; second, a storage basin may be built on Bannister's brook, and its waters turned into the lake; third, a storage basin may be built on Snake brook.

The estimated cost of these extensions is \$274,814, and the estimated increase of daily supply is 2,000,000 gallons.

Interest upon \$274,814, at 6 per cent.	.	.	\$16,488.84
Cost of delivering 730,000,000 gallons	.	.	16,488.84
“ “ 1,000,000 “	.	.	22.59

That is, the cost of delivering to the conduit each million of the increase of supply would be \$22.59.

There appears to be no engineering difficulty to encounter in raising the lake two feet, but the surrounding towns have hitherto opposed it with sufficient effect to prevent the necessary legislative action, and it is doubtful if such action can ever be obtained.

Bannister's brook now flows into the outlet of the lake below the dam, and thence finds its way into Sudbury river. As its waters have never been diverted, it is presumed that the city now has no right to divert them.

The advantages to be gained by the building of a basin on Snake brook are not of sufficient importance to counterbalance the objections to it. The chief one of these may be mentioned. It will occupy a position directly over the existing conduit, and would render the emptying of the conduit for inspection and repairs hazardous and probably impossible; in fact, it would greatly endanger the safety of this structure even when flowing full, as the head of water over it with a full basin would be twenty-six feet, and the leakage into it would be large, and would take place with such rapid current and force as to carry in great quantities of sand, and thus undermine the foundation and disturb the bricks. Under the present head of only a few feet such action is taking place to an extent that causes much uneasiness, and which, if no remedy is applied, will ultimately destroy this portion of the aqueduct.

If a breach should occur under the basin, the entire destruction of a long section would inevitably result, and the contents of the whole basin might be emptied into some valley farther down on the conduit line.

It would appear, therefore, that in estimating the capacity of the Cochituate district, no account can be taken of an increase of supply from new storage basins within that district. It has, however, been suggested that an increase may be secured by building basins to the east of the lake along the line of the conduit.

This point has been thoroughly studied by Mr. Fteley, and is treated of in his report.

He finds that storage reservoirs of large capacity may be formed in a valley which now discharges its waters into the Charles river, and that a water-shed of nearly eight square miles may thus be made to contribute to the supply of the city. The high-water lines of these reservoirs will be above that of Lake Cochituate; hence they can be used to store the waters of the Cochituate district only under exceptional circumstances; they have, however, a contributing area of their own, which will afford a daily supply of about 5,700,000 gallons of pure water that is not liable to contamination in the future.*

As a new conduit would be needed to render the waters of this district available, it should be treated as a new and independent source of supply, rather than as an addition to the lake district. The new conduit can be easily connected with the old one, and thus be made to aid the latter in conveying the lake water to Chestnut Hill reservoir.

The brook on which the basins would be built empties into the Charles river at a point just below South Natick. It has one or two mills of importance on its banks, and, of course, aids in the supply to the mills below its mouth, on the Charles and Neponset rivers. The mill damages would be relatively large. The estimated cost of works for this source is as follows:—

Cost of storage basins, including land damages	
and short connecting conduit, etc.	\$420,197
Cost of new conduit to Chestnut Hill Reservoir	1,608,000
Total	\$2,028,197

* This quantity added to the yield of the Cochituate district in a dry year would give a total daily yield of about 19½ millions, and if the effect of the improvements in the Cochituate district, that have been suggested, be taken into account, the total daily yield would be about 21½ millions, making no deductions for the sewerage area of Natick.

(No estimate is made of mill damages.)

The cost of delivering each million of gallons to Chestnut Hill reservoir would be :—

Interest upon \$2,028,197, @ 6 per cent.	. \$121,691 82
Cost of delivering 2,080,500,000 gallons	. 121,691 82
Cost of delivering 1,000,000 gallons	. 58.49

There is another scheme for utilizing this source, or at least a portion of it, by which a large saving in first cost can be effected, and one of the great objections to the previous scheme removed.*

In the second scheme a new conduit will not be needed, and only the reservoirs on Stevens' brook are to be built; but they are to be made of greater capacity than proposed in the first scheme.

The lake district, with its present storage, will in ordinary years furnish a supply of 15 to 18 million gallons daily, and if a large body of water can be held in store at some other point, to be used in making good the deficiency in a dry season, the average daily supply for each and every year may be made to equal say 17,000,000 gallons, which is all that the existing conduit in its present condition can safely convey.

Reservoirs on this brook can be built which will store 1,600,000,000 gallons, and which, with the natural yield of their water-shed, will furnish a daily supply of nearly 6,000,000. This assumes that they are not ordinarily drawn upon, but are kept full for use in an emergency only, as once emptied it will require two or three years for them to fill again, no water being drawn from them in the mean time. When the dry year comes it is probable that Lake Cochituate

*The Pickerel-pond basin would cover about $\frac{3}{4}$ of a mile of conduit to a depth of 17 feet, and the same objections to its construction would hold as for the Snake-brook basin; objections which must be deemed decisive.

will be found quite or nearly empty at its beginning ; hence, all that can be expected from the lake district will be a little more than the natural flow of the streams, or an average of say 11,000,000 daily.

We have, then, for the daily yield of the two sources in a very dry year, about 17,000,000 gallons ; the estimated increase of supply beyond that to be derived from the lake district in such a year being 3,500,000 gallons.

The lower basin on Stevens' brook is to be connected with the old aqueduct by means of a short line of conduit and a gate-house, and with these structures the estimated cost of the scheme, exclusive of the mill damages on the brook below the lower dam, and on Charles river, Mother brook and the Neponset, is \$210,000.

If a small addition only to the present supply were needed, this scheme would deserve careful attention ; but as matters are, it entirely fails to meet even the immediate wants of the city.

MYSTIC LAKE.

When the storage capacity of any source of supply is small relatively to the extent of water-shed, it will be impossible to hold the produce of the winter's snow and spring rains for use later in the year, and the least yield must be computed from the natural flow of the streams during a short period in the summer and fall of a season of drought, and from the quantity of water held in store at the beginning of that period. The yield thus determined will be the measure of the safe capacity of the source for a domestic supply.

We have the following data for ascertaining the minimum yield of the Mystic district, with its existing capacity for storage.

Water-shed exclusive of water-surfaces 27.5 square miles.

Available storage capacity 380,000,000 gallons.

Experiments upon the Cochituate district have shown that for a period of three months in a very dry season, the nat-

ural daily flow of the streams may be reduced to an average of 130,000 gallons per square mile of water-shed.

During such a period there would be a daily flow into Mystic lake of 3,575,000 gallons, from its drainage area of $27\frac{1}{2}$ square miles. Of course the lake will yield in addition to what it receives the quantity it holds in store. If the lake be full, it will supply 4,220,000 gallons per day for three months, from its storage alone; therefore its average total daily yield for that period will be 7,795,000 gallons.

These figures should be reduced somewhat — to say 7,500,000 — on account of the improbability of the lake being entirely full at the beginning of the period of three months, and to conform to the experience of 1871, when, with a consumption of a little over 5,000,000 gallons daily, the lake was drawn down to a level only 8 feet above the bottom of the conduit.

It is evident from this computation that, within certain limits, the daily yield will rapidly increase with increase of storage capacity, since we have supposed the storage to be drawn upon during three months only of each year.

Mr. Cunningham has made a very careful examination of the valley to ascertain what may be done to increase the storage capacity. The results of his investigations will be found in his report, Appendix B.

He finds that if all the storage facilities above the upper Mystic be utilized, a total daily supply of 17,000,000 gallons may be obtained in the year of drought, and that if the lower Mystic, with its available storage capacity of 281,408,000 gallons and its water-shed of 5.63 square miles, be added, a total daily supply of a little over 20,000,000 gallons may be relied upon.*

In his calculations he has assumed that only 12 inches of rain are collectable in the dry year. As it has been

* This corresponds to a daily supply of from 25 to 30 millions in ordinary years.

ascertained by experiment and observation that this is true for the Cochituate district, and as the rain records show that the rainfall is considerably larger in the Cochituate than in the Mystic valley, it would seem as if this position needed no further support; but as, notwithstanding these facts, there has been considerable discussion about its applicability to the Mystic district, I have had experiments made with apparatus for accurate measurements, to determine as near as may be, from the Charlestown records of 1871, the depth of rain actually collected in that year, and its percentage of the total rainfall. The measurements were made with another object in view also, namely, to establish a formula for computing the yield of the valley from the records of future years.

The method of conducting the experiments and the results derived from them are explained in Mr. Fteley's report, Appendix C. Mr. Thomas Doane, Engineer of the Mystic Board, was associated with Mr. Fteley, and I am informed that they agree in their conclusions.

They find that the amount collected was equivalent to 12.92 inches in depth upon the whole water-shed, which is 43.2 per cent. of the rainfall as measured by the gauge of the Mystic Water works, and $31\frac{8}{10}$ per cent. of the rainfall at the Cambridge observatory. There can be no doubt, after an examination of the records kept at various places, that the results obtained from the Mystic gauge in that year are not applicable to the entire valley. It is not probable that the fall, as an average for the whole valley, was less than 40 inches. The assumption, therefore, that from a rainfall of only 30 inches not more than 12 inches would be collected, seems reasonable and proper.

There are a number of thickly settled and rapidly growing towns in this drainage basin which already have public water supplies, and the sewage of which must soon be diverted from the tributaries of the lake, if it is proposed to maintain

the latter as a source of domestic supply. When this is done, the lake water-shed and the supply from it will be appreciably diminished. Mr. Cunningham's report explains this matter more fully.

After deducting the quantity that it is estimated the population of the territory now supplied from the Mystic valley will use in 1876, but making no deductions for loss by sewage areas, it is found that if that year should prove to be one of drought, there would be a daily surplus of about 7,000,000 gallons, which might be used to supplement the Cochituate supply. This estimate is for the whole basin, including the lower Mystic and Mill brook valley.

The great cost of the large storage basin upon the Abajonna (No. 6), and its position close to, and at a higher elevation than, the Lowell Railroad, will probably prevent its building now or at any future time. The lower part of this basin, if flooded to the depth proposed, will form a very good reservoir; but the upper part will contain some 55 acres flowed less than 5 feet deep.

A reservoir of much smaller capacity may be built at this point, having its flow-line below the level of the Lowell Railroad, which would cost less than half as much as the one proposed.

The tide now flows into and out of the lower Mystic pond, and the water which it contains is salt, varying in degree of saltiness from the surface to the bottom, where it has about half the saltiness of sea-water. The bottom of the deeper portions is covered with a thick layer of mud, from which nauseating gases, such as sulphuretted hydrogen, are constantly escaping in considerable volumes. Whether or not a basin suitable for the storage of potable waters can be formed here is a question which cannot be definitely answered.

That as full information on the subject as it was practicable to obtain within the time allowed for investigation,

might be laid before you, Mr. J. M. Merrick, Analytical Chemist, was requested to make such examinations as he might deem necessary, and to report the results, and give his opinion upon the general question. His report will be found in the Appendix (D).

It has not, however, been handed in at the time of this writing; but I have received from him a letter in answer to certain inquiries, which I quote:—

"In answer to the questions submitted to me by yourself,

"*First.* Whether, before making use of the lower Mystic pond for a storage basin for water for the use of the city, it will be needful to pump out the water now in it;

"*Second.* Whether, a dam having been built and the water pumped out, it will be judicious to use the pond as a storage basin, I have to say, in advance of my detailed report, and at your request,—

"*First.* That analyses given with considerable minuteness and detail in my report answer the first question emphatically in the affirmative, since the water in the lower Mystic is undrinkable, and the contents in saline matters—to be shown in tables—increase with tolerable uniformity to a depth of 80 or 85 feet, until the percentage of salts becomes nearly one-half that of sea-water. In addition to these the water is rendered nauseous by sulphur compounds.

"*Second.* In answer to the question of feasibility of using the natural basin of the lower Mystic as a storage reservoir, I have to say that I think such use can safely be made of the basin after a dam shall have been built and the present water completely pumped out.

"I base my opinion upon the numerous analyses of water and mud-deposits which I have made, and upon my observations and experiments at the pond itself, which lead to the following conclusions, viz.:—

"The source of the present most offensive impurity in the

water of the lower pond, sulphuretted hydrogen, — and perhaps other sulphur compounds, — is derived in part from sewage flowing into the pond, but undoubtedly in much the largest measure from the mutual action of the sulphates in the pond-water contained in the inflowing sea-water, and the vegetable matters at the bottom of the pond.

(“No proof has ever been advanced that the sulphurous matters are derived from the soil or rocks at the bottom of the pond.)

“If, then, a dam be built, and the introduction of sewage matter arrested, and the water charged with sulphates and other salts removed, the conditions which render the water impure will be changed. There will still remain at the bottom of the pond a layer of mud charged with saline matters, which will — in contact with the organic substances — continue for some time to decompose, but not being fed by fresh supplies of salt water and sewage will, no doubt, finally become no worse in chemical character than the mud at the bottom of the upper Mystic, or any fresh-water pond. Some considerable amount of free and combined sulphuretted hydrogen was obtained in samples of mud-deposits taken from the bottom of the upper Mystic by myself, September 7, 1874, and such could probably be found in mud taken from any fresh-water pond whose water is, at the same time, unobjectionable for domestic use.

(Signed,)

“J. M. MERRICK.”

The sewage matter and vegetable deposits referred to by Mr. Merrick are brought into the pond by Mill brook and the inflowing tide of Mystic river. Mill brook drains a portion of Lexington and the greater part of Arlington.

This last is a thriving town, that is likely to support a large population in the future. It is already supplied with water, and its sewage will soon become a source of serious pollution to the stream. The land of the valley is largely used for

market gardening, and is for that purpose very highly manured; hence, even if the sewage of the town is utilized, instead of being poured directly into the brook, there will be serious contamination from this territory by surface washings in heavy rains. There are various manufacturing establishments on the stream, and gas works near its mouth; it may, therefore, be positively stated that its waters in its lower reach are unfit for domestic use, and should be diverted from the lower pond if the latter is to be used for a storage basin.

The building of a dam will shut out the tide-water flowing through Mystic or Medford river, but for a long series of years, with each inflowing tide, — especially in the fall of the year, — large masses of vegetable matter, such as reeds and grasses from the salt marshes below, have been brought in and become water-soaked, and sunk to the bottom in the still waters of the pond.

The accumulation of organic matter at the bottom of the pond from this cause must be very large; and while, as Mr. Merrick says, it is probable that it will slowly decompose after the introduction of new matter is arrested, yet it is almost certain that a long time will be required to completely destroy it, and thus remove the source of the nauseating gases that render the water unfit for use.

Mr. Merrick points out the necessity of removing the salt water from the basin before it is used for the storage of potable waters. This will be an expensive and not altogether practicable operation. While the pumping is going on, the basin must be kept full, else the surrounding country, which is composed of sand and gravel, will be drained, and the safety of the upper Mystic dam endangered. If fresh water from the upper Mystic is let in as the salt water is pumped out, it might be supposed that the former would remain upon the top, and the latter be gradually pumped from under it. To a certain extent this arrangement of the two waters into upper and lower layers would take place, but there would

be a sufficient mingling of the two to require a much larger volume than the contents of the pond to be removed in order to be rid of the saline matter.

If the water-shed of the pond be rendered ineffective by the diversion of Mill brook, the use of the pond as a storage basin will increase the daily supply by about 800,000 gallons only, and its cost would hardly be balanced by the benefit gained. In any event, it will be so long before its waters can be rendered fit for domestic use, that its effect in increasing the supply should not be taken into account in the present inquiry.

The estimates of cost of this basin given by Mr. Cunningham do not include the cost of diverting Mill brook, nor of pumping out the salt water.

If it be conceded that it is impracticable or not advisable to make use of the lower Mystic, the supply in a season of drought, from the Mystic valley, will be about 17,000,000 gallons daily; and if, further, the capacity of the proposed basin, No. 6, on the Abajonna, be reduced, on account of cost and damage to private property, the daily supply will be about 16,000,000 gallons.

LAKE COCHITUATE AND MYSTIC LAKE COMBINED.

The order of June 15 reads as follows: —

“Ordered, That the Joint Standing Committee on the Water Department ascertain and report whether the present source of our water supply from Lake Cochituate and Mystic lake, combined, can be so utilized as to give an adequate water supply to the city in a season of drought, how great that supply would be, and for how many years that supply would be adequate, and what plan it is necessary to adopt to give us such a supply, and what would be the expense, including the necessary reservoirs, and without them.”

Without additional storage reservoirs the supply from both

sources in such a season would be entirely inadequate for the present wants of the population now depending upon them, as is proven by the experience of 1871, when Lake Cochituate was completely exhausted and the Mystic lake drawn down 3.9 feet below high-water mark,* although the daily consumption from both works in that year was 6,500,000 gallons less than during last year, and some 8,000,000 less than the probable consumption of this year.

The least yield of the Cochituate with its existing storage has been estimated at 13,500,000 gallons daily, that of the Mystic at 7,500,000 ; therefore both sources will yield a total daily supply of 21,000,000 gallons in a season of drought.

The daily consumption from the two sources, in 1873, was 25,600,000 gallons ; hence, had it been a dry year, there would have been a deficiency of supply of 4,600,000 gallons daily.

This is a point of grave importance to the city, and I wish to call attention to the fact that the possible deficiency of supply and its amount, as given above, is not merely a matter of estimate, but is actually proven by the records for 1871. Should the coming year yield no greater supply than did 1871, there would be a daily deficiency of 7 or 8 million gallons.

It has been stated that a large volume of water — 20 or 30 million gallons daily — runs to waste over the Mystic dam for weeks at a time ; that often the waste continues till late in the summer, or for a period of 5 or 6 months, and the question has been asked why it cannot be made available for supplying Boston during such periods, thus permitting Cochituate lake to fill up with water, for maintaining the supply later in the year when the Mystic may have no surplus.

* In this year there were 230 days in which no water ran to waste over the Mystic dam, of which 172 in the summer and fall were consecutive. There was some waste, however, at the wier of the conduit, estimated to average 1,360,000 gallons per day.

The cost of the machinery for pumping, and of the mains to deliver in Boston proper a supply of 20 or 30 or even 15 million gallons per day from the Mystic, would be very great; and the expense of operating the works, lying idle as they would nearly half the year, and furnishing a constantly varying supply when in use, would be out of proportion to the benefit derived. Moreover, usually when there is an abundance of water in the Mystic there is an abundance also in the Cochituate, and to draw from the former at such times would simply allow waste to take place at the latter, little or nothing being gained at the end of the year.

In the dry year the large waste does not take place, as is shown by the records for 1871, when there were only 135 days in which water ran over the Mystic dam; these were scattered irregularly through the spring and fall months, and the waste varied greatly from week to week.

The storage basins hereinafter proposed will provide for very nearly all the rainfall that enters the streams in a season of drought; and the building of such basins to equalize the daily delivery through the year is the only practicable method of making available the entire yield of such a season.

It is impossible to obtain sufficient storage capacity to prevent a large waste when the snows are melting and the spring rains are falling, in ordinary years. A warm rain falling upon a good depth of snow may cause a flow into Mystic lake of two or three hundred million gallons in twenty-four hours; and at the period when this will happen, the storage basins will usually be full from the accumulations of the previous fall and winter.

It has been shown that the Cochituate supply may be increased about 2,000,000 gallons daily, by making available all the storage room within the lake district and its immediate vicinity; but for various reasons, before given, it is thought the works necessary for this purpose will never be built.

It has been further shown that the supply from this source

may be supplemented by one from Stevens brook, and the two sources be made to yield a daily supply of about 17,000,000 gallons; also that the supply from the Mystic may be increased to about 16,000,000 gallons per day, by building a number of new storage basins above the upper Mystic pond or lake. The lower pond and its water-shed are excluded, for reasons before given.

The combined daily supply from all the sources in a year of drought will be then 33,000,000 gallons, which will afford a surplus of 7,500,000 above the consumption of last year. The daily surplus in an ordinary year would be, as an average, about 13,000,000 gallons, the whole of which would be afforded by the Mystic district; but, even with this fact before us, it is evident that no large expenditure for the special supply of Boston proper from this source would be warranted.

The rapidly increasing demand for water by the population now supplied on the north side of the Charles and Mystic, and the necessary diminution in the yield of the valley that must be caused in the near future by the building of sewers to preserve or restore the purity of the supply, are matters which must be considered, and should have great weight, in forming an opinion on this point.

It is probable that at a moderate cost, and without much diminishing the water-shed, the refuse from existing tanneries and other manufactories may be diverted, or otherwise disposed of; but this form of contamination is increasing, and a still more formidable and dangerous pollution—the sewage from a rapidly increasing population—will soon make itself felt.

It is plain that the purity of this supply can only be maintained in the future at a large cost, and with an appreciable diminution of its quantity. Mr. Cunningham estimates that the drainage from more than three square miles of this territory must be diverted within a few years, which would lessen the supply by nearly 2,000,000 gallons daily.

It may be stated, therefore, that after both the sources have been developed as proposed, a daily surplus of from 6 to 11 millions — depending upon the weather of the year — beyond the present consumption, may be had for use in Boston proper.

The future increase of consumption is a matter of great uncertainty, as it depends upon a number of conditions that cannot be foreseen, such as increase of population, increase of certain manufactures, and of business generally, the weather, the restrictions put upon the use of water, the powers granted to water boards to control the use and prevent waste, etc. The best that can be done is to estimate the increase of the future by that of the past, making such modifications as the circumstances of the case seem to demand.

In making the estimate, I assume that the increase for the next few years will be much less than it has been for the past few, as during the latter period we have had seasons of partial drought and large additions of territory. The yearly increase since 1868 has been nearly ten per cent.

The consumption from both works in 1873 was 25,600,000 gallons daily; let it be assumed that the future increase will be at the rate of seven per cent. yearly; then

for 1874 it will be 27,392,000 gallons daily.			
“ 1875	“	29,309,440	“
“ 1876	“	31,361,100	“
“ 1877	“	33,556,377	“
“ 1878	“	35,905,323	“
“ 1879	“	38,418,695	“
“ 1880	“	41,108,003	“

The yield of both sources in a dry year, after the proposed improvements have been made, has been estimated at 33,000,000 gallons daily. From the above table we see that if 1877 should prove to be such a year, the supply would be

fully used. The yield in a season of plenty would be from 40 to 42 million gallons daily, all of which would be required for the estimated consumption of 1880; and the daily yield in an ordinary year would be from 36 to 39 millions, which would provide for the estimated consumption of 1878 or 1879. No deductions have been made in this estimate for the water used by Woburn and Winchester, both of which take a supply from the Mystic water-shed.

SCHEME OF WORKS AND ESTIMATES OF COST.

In devising a scheme of works for the partial supply of Boston proper from the Mystic source, the study has been confined to those of limited capacity and moderate cost, and to such as in whole or in great part may ultimately be made serviceable for the supply of Charlestown, and the other cities now depending upon the Mystic works, their use for the former purpose being regarded as temporary only.

The scheme selected for an estimate is described in the report of Mr. Cunningham.

It is proposed to add a new engine of a capacity of 8,000,000 gallons in twenty-four hours, and the corresponding boilers, to those now in use at the Mystic pumping station, and to lay new force and distributing mains; the latter to pass through Charlestown to the end of Warren bridge, where it will connect with the 20-inch pipe now laid across that bridge. The 20-inch pipe is of less capacity than is desirable, but may be made to serve the purpose required by putting it under the proper pressure at the Charlestown end. The force main will lead to and terminate in a short stand-pipe located on Walnut Hill, near the Charlestown reservoir.

The object of the stand-pipe is to allow the head of water under which the distribution is made to regulate itself to suit the hourly varying pressure of the Cochituate supply in Boston.

As has been explained in a previous report, it is not thought advisable to isolate a portion of the distributing system of pipes in the city for the exclusive use of a small supply, but rather to so regulate the pressures, that the water from both the Cochituate and Mystic works may flow through the same pipes, and thus provide for an adequate supply in case of a large fire.

If the water be drawn from reservoirs of different elevations (the elevation of Chestnut Hill reservoir is 124, and of the Charlestown reservoir 147 feet), this end can be well attained only by a frequent operation of stop-gates, requiring the constant attention of a man, since the Cochituate pressure at the North End, where the supply would be received, varies during the day from 38 to 48 lbs.; if, however, the supply be taken from a stand-pipe, the level of water in it, or the head, will, if required, adapt itself to a uniform flow in the pipes.

The works proposed can deliver from five to seven million gallons daily, by varying the head in the stand-pipe; the estimate of their cost is \$393,490, based upon the use of cast-iron pipes for force and delivery mains.

The total cost of the proposed improvements and additions to the Cochituate and Mystic works is as follows:—

Cost of reservoirs, etc., on Stevens' brook	\$210,000 00
“ “ “ in Mystic valley	738,542 00
“ engine, force and delivery mains, stand-pipe, etc.	393,490 00
Total	<u>\$1,342,032 00</u>

In the preceding estimate, no account is taken of mill damages on Stevens' brook, Charles and Neponset rivers. These, of course, would be small, as the mills will be deprived of the flow from only four and a half square miles of watershed. The right to make this diversion must be secured by act of the Legislature.

No estimate is given of the cost of sewerage either in the Cochituate or Mystic valley, as this must be constructed whether the proposed improvements are made or not.

In concluding this portion of the report, I desire to say that even if it should be decided not to bring the Mystic water to this side of the Charles river, no time should be lost in providing more storage, for the use of Charlestown. This matter will undoubtedly soon be brought to the attention of the City Council, by the Mystic Water Board, and no extended remarks are needed here.

Also, that in an emergency within the next year, during those months that water is wasting over the dam, a supply for Boston proper of, say four or five million gallons daily, may be obtained from the Mystic works without any addition to the pumping machinery, and none to the delivery mains other than is now being made. This cannot be done, however, without some inconvenience to the consumers on the high grounds in Charlestown.

CHARLES RIVER.

The order of the City Council of June 29th reads as follows:—

"Ordered, That the Joint Standing Committee on water be requested to examine the Charles river, and report in print upon its availability as a source of supply to the city of Boston, giving the estimated cost of the works required to bring its waters to Chestnut-hill reservoir."

In a report, made in 1845 by Commissioners John B. Jarvis and Walter R. Johnson, is printed a table showing the summer flow of the Charles river at Newton Upper Falls, the figures for which were obtained by gaugings made during a period of eight weeks in August, September and October of that year.

The Commissioners say :—

"It will doubtless be remarked that considerable diversities existed in the flow of the river on consecutive days; this was no doubt owing, in some measure, to the different rates at which the water was used at the mills higher up on the river, as at Dover, Natick, and elsewhere. The exceeding sluggishness of the stream prevents these differences in the rate of discharge above from being felt immediately, or, indeed, until after some days have elapsed. On Sundays, the river is a long series of pools without motion, except that of the portion of water which happens to be *in transitu* from an upper to a lower pool."

"Several rains fell during the time of our gauging, and temporarily raised the river. The effect of these is sufficiently observable."

"Daily Flow of Water in Charles River, as Gauged above the Upper Falls, Newton, from August 21st to October 14th, 1845."

AUGUST.

DATE.	No. of sets of Observations.	TIME OF COMMENCING AND TERMINATING OBSERVATIONS.		Total No. of gallons dis'cd each day.
		Beginning at.	Ending at.	
21	4	6.25 A.M.	7.00 P.M.	20,298,752
22	5	5.25	7.00	22,574,052
23	5	5.25	7.00	25,271,860
24	5	5.25	7.00	42,897,150
25	5	5.25	7.00	69,485,166
26	5	5.25	7.00	40,334,888
27	5	5.25	7.00	34,377,284
28	5	5.25	7.00	39,008,590
29	5	5.25	7.00	38,863,930
30	5	5.25	7.00	33,263,832
31	5	5.25	7.00	22,689,390

"Daily Flow of Water in Charles River, etc.

SEPTEMBER.

DATE.	No. of sets of Observations.	TIME OF COMMENCING AND TERMINATING OBSERVATIONS.		Total No. of gallons disc'd each day.
		Beginning at.	Ending at.	
1	5	5.25 A.M.	7.00 P.M.	20,211,754
2	5	5.25	7.00	23,817,872
3	5	5.25	7.00	22,482,704
4	5	5.25	7.00	22,616,180
5	5	5.35	7.00	24,101,222
6	5	5.25	7.00	23,140,362
7	4	5.25	4.00	20,370,142
8	...	.....	.....	.....
9	...	.....	.....	.....
10	2	4.30 P.M.	6.30	14,045,900
11	5	5.30 A.M.	6.30	16,790,360
12	5	5.20	6.25	18,972,980
13	5	5.15	6.25	19,658,040
14	4	6.00	6.30	16,969,652
15	5	5.20	6.05	9,367,100
16	5	5.30	6.10	10,069,090
17	5	5.40	6.10	17,752,916
18	5	5.40	5.50	20,355,930
19	5	5.45	5.50	18,566,920
20	5	5.40	5.55	20,586,064
21	2	6.10	9.10 A.M.	21,506,770
22	5	5.35	5.55 P.M.	12,116,889
23	5	5.45	5.55	19,617,538
24	5	5.45	6.00	22,096,016
25	5	5.40	5.50	21,741,854
26	5	5.55	5.50	23,334,132
27	5	5.50	5.45	22,226,012
28	...	.....	.....	Sunday.
29	5	5.45	6.15	13,913,892
30	5	5.30	6.10	19,099,878

"Daily Flow of Water in Charles River, etc.

OCTOBER.

DATE.	No. of sets of Observations.	TIME OF COMMENCING AND TERMINATING OBSERVATIONS.		Total No. of gallons disc'd each day.
		Beginning at.	Ending at.	
1	5	5.50 A.M.	6.00 P.M.	23,262,558
2	5	5.40	6.00	22,398,120
3	5	5.40	6.00	22,550,180
4	5	5.50	5.50	24,043,614
5	...	.....	.....	Sunday.
6	5	5.55	5.50	30,033,566
7	5	5.50	5.55	39,895,524
8	5	5.45	5.50	39,838,792
9	5	6.00	5.45	39,576,906
10	5	6.13	5.35	43,977,908
11	5	6.20	5.40	46,607,046
12	...	.....	.....	Sunday.
13	5	5.50	5.45	43,169,840
14	1	5.50	5.54 A.M.	45,845,780

"We have seen published statements of various estimates as to what this river would furnish per day. Some have placed it as high as 30,000,000 gallons. It will be seen by the actual gauging on the 15th and 16th of September, that it did not, on the average of the two days, then discharge one-third of this quantity; and that, for the whole month of September, its average daily flow was 19,108,451 gallons; or less than two-thirds of the published estimate. The lowest gauging stated by Mr. Crehore (cited by Mr. Wilkins in his 'Further Remarks,' etc.) viz., that of July 26th, 1841, was $31\frac{3}{4}$ cubic feet per second, equal to 20,366,640 gallons per day."

"When reduced to its lowest stage during our gauging, Charles river supplied 9,367,100 gallons. By the statement of Mr. Hurd, one of the proprietors of the paper-mills at

Newton Lower Falls, we learn that in the latter part of October, after our observations terminated, the water was as low as it had been at any time in September; and that in August, it had, at its lowest stage, been as low as in either of the other two months. Of this testimony we have no reason to doubt the correctness, as Mr. Hurd has daily occasion to observe the rate of supply to his manufactory."

"That the present, has not, thus far, been a year of extraordinary drought, is proved by the rain gauges of the Cambridge observatory, kindly furnished to us by Mr. Bond, and that of Dr. Hale, kept at his residence in Boston."

The average daily flow for the 50 days of gauging was $26\frac{1}{2}$ million gallons; the average during the month of September was 19,000,000. To obtain the entire flow of the river during the above periods, these figures should be increased by 33 per cent., as one-third of the flow is diverted into the Neponset river through Mother brook, at a point above where the gaugings were made; but it will be observed that even with this increase the natural flow is too small to furnish an adequate supply to this city. Storage basins will be needed therefore, to provide the requisite quantity as well as to assure the desirable purity.

By what project the waters of this river should be made available for a domestic supply is a question which requires for its solution much more time and closer study than it has been possible thus far to give it. Even the best point for taking the water is — looking well to the future and weighing the cost of works — a matter of some doubt, and there are many schemes of works to choose from, each of which has its merits. Several of these schemes are noticed in the report of Mr. Fteley (Appendix E) and he has selected for estimates of cost and description a number which are representative, and which offer sufficient data for forming an opinion of the value of the river as a source of supply, and for comparing it with the other sources that have been before reported upon.

The water may be taken at Newton Lower Falls, at either of two points in Newton Upper Falls, at West Roxbury, at the village of Greendale in Needham, and at a point just above South Natick. For most of these places two or more schemes of works differing in important details might be proposed.

The study that has just been made has developed some new facts, and changed some preconceived opinions. For instance, it was thought that the topography of the country below Natick and the situation of the towns along the river, were such as to render impossible, or not practicable, the building of capacious storage basins with a sufficient depth of flow. The recent surveys show, on the contrary, that a very large one may be built in that territory, by the erection of a dam at Newton Upper Falls. Its water surface would cover about 2,900 acres, and its available capacity would be 7,500,000,000 gallons. The depth of flowage would not be so great as is desirable, but it is thought it would be sufficient to prevent the growth of plants on the bottom, except when drawn down lower than ordinary use will require. It will be a costly basin to build, and will destroy some 20 or 30 dwellings, but there are no engineering difficulties of importance to overcome in its construction; the main objections to it are sanitary. It is possible that with its relatively high level and proximity to Dedham — at its very doors as it were — it might affect prejudicially the health of that town; and it is liable to receive in the future, the sewage from a large population in the valley above. When Boston shall have a population that will require a daily supply of 50,000,000 gallons of water, the valley of the Charles, for some miles up, will be thickly settled, and the river must be the means of conveying its sewage to the sea.

This basin will cost about the same as one of larger capacity that may be built above South Natick (described in

Appendix E), and in case the supply is taken at any point above Dedham, can serve no purpose, except it be to store water for the use of the mills.

The whole valley of the Charles has been very thoroughly examined by the Commission appointed to report upon the purity of the waters from various sources, and it is probable that the question, above mentioned, of the danger (or otherwise) of sewage contamination to the supply if taken at any point below South Natick, will be fully treated in its report; not knowing, however, the opinions that will be formed on this point, Mr. Fteley has described and made estimates for a number of schemes of works, some of which are based upon taking the supply below Dedham, and one of which provides for the filtration of the water.

The following are the schemes of works for which estimates of cost have been made. In each of them the water is taken from the river at an elevation which necessitates pumping, and as a basis for calculating its cost a daily supply of 50,000,000 gallons is assumed.

Scheme No. 1.

Water taken near Newton Lower Falls:—

Cost of works, including a large storage basin to be built either at Dedham or above South Natick	\$3,554,000 00
Cost of delivering each million of gallons .	17 05

Water stored but not filtered.

Scheme No. 2.

Water taken at Newton Upper Falls:—

Cost of works, including a large storage basin at Dedham	\$3,575,000 00
Cost of delivering each million of gallons .	16 07

Water not filtered but taken directly from the
storage basin.

Scheme No. 3.

Water taken at Newton Upper Falls. Storage basin at Dedham or above South Natick and filter beds at Newton Highlands : —

Cost of works	\$5,366,239 00
Cost of delivering each million of gallons	25 30

Water stored and filtered.

The estimate does not include the cost of roofing over the filter beds. The ice and snow of our severe winters, and also the heat of our summers, may make such protection necessary.

Scheme No. 4.

Water taken near Greendale, in Needham. Two storage basins ; — a large one above South Natick, and a small one at the point of taking : —

Cost of works, about	\$4,500,000 00
Cost of delivering each million of gallons, about	20 00

This scheme will cost just about the same as scheme No. 5, and, having the objection of a greater liability to pollution of the water by sewage, has not received much attention.

Scheme No. 5.

Water taken at a point about one mile above the village of South Natick, where it is proposed to build a dam and form a large reservoir of an available capacity of about 9,000,000,-000 gallons : —

Cost of works	\$4,906,667 00
Cost of delivering each million gallons .	19 96

Water not filtered, but taken directly from storage basin.

This basin would cover an area of nearly 4,000 acres to an average depth of about 9 feet, which depth is less than s

desirable. 'Three hundred and fifty-four acres would be covered with less than five feet of water even when the basin is full. It is rarely, however, that artificial basins can be formed by simply building a dam across a valley, without causing considerable shallow flowage.' Lake Cochituate, with a total water area of about 800 acres, has nearly 200 acres flowed not more than five or six feet deep.

As has been stated in a previous report, no reason is known why the waters of Charles river, if taken above South Natick, should not prove of satisfactory quality.

The preceding estimates do not include the cost of mill damages. The mills that will be damaged are situated on the Charles river at and below South Natick, on Mother brook, and on the Neponset river below the mouth of Mother brook. Tables giving their location, character of manufactures, height of dams, number of wheels, etc., will be found in the report of your sub-committee, City Doc. No. 38, pages xviii.-xxi. If all the water of the river is to be paid for, the mills upon the Charles and upon Mother brook will receive nearly the value of their entire power, and there appears to be a marked difference in this respect between the damages the city will incur in taking the Sudbury and those to be incurred in taking the Charles. The Sudbury is a branch of a larger river (the Concord), upon which nearly all the mills affected are situated, and in diverting the waters of the former the mills upon the Concord are deprived of only about one-fifth of their power. (The mills at Saxonville are the only ones located on the Sudbury itself, below the point of taking.) The Charles, on the contrary, is a main stream, and when its waters are diverted the mills below lose nearly the whole of their power.

To compare the Charles-river schemes with that of the Sudbury, some changes must be made in the estimates of cost.

Since the date of the Sudbury-river report, Jan. 27, 1873,

the consumption in the city has largely increased, and in consequence it will be impossible to draw Chestnut-hill reservoir down, — as was then proposed, — to facilitate the building of the various inlet chambers, and to make the connection with the distributing mains. This has necessitated an entire change of the plans for that part of the work which, in connection with other modifications, has increased the cost about \$200,000.

The Sudbury-river estimate — as stated — included the cost of building the three lower basins only, as the others would not be needed for some years to come. The cost of the upper basins will be about \$350,000; hence the estimate for the complete scheme will be \$5,338,318.

The estimate of Charles-river scheme No. 5, is \$4,906,677. To this should be added a sum the interest of which will equal the yearly cost of pumping. This sum, reckoned upon the basis of a daily supply of 40,000,000 gallons, would be about \$1,000,000; hence for purposes of comparison the Charles-river estimate should be stated at 5,900,000.

The Charles will furnish much the larger volume of water. By increasing the storage capacity above that now proposed, a supply of 80,000,000 gallons daily may be obtained from it.

The Sudbury will furnish its waters by gravitation, and the storage basins that may be built upon it would have a much greater average depth than those proposed for the Charles.

(See Appendix of City Doc. No. 29, 1873.)

So far as quality of water is concerned, there is very little difference between the two sources, if the comparison be confined to that portion of the Charles which is above South Natick.

The data needed to determine at what point it is best to take the water from this river will be found in the report of the Commission, before referred to. If it be found admissible to take it without filtering from the Dedham basin at Newton

Upper Falls, and satisfactory legislation for this purpose can be obtained, then scheme No. 2 is the one to be used for comparison with other sources. The cost of works in that scheme is \$3,575,000. The yearly cost of pumping 40,000,000 gallons per day, capitalized at 6 per cent., is \$1,200,000, which, added to the cost of works, gives a total of \$4,775,000.

Respectfully submitted,

JOS. P. DAVIS.

APPENDIX A.

REPORT

OF

MR. A. FTELEY,

ON

INCREASING THE SUPPLY FROM

LAKE COCHITUATE.

APPENDIX A.

OFFICE OF BOSTON WATER WORKS, ADDITIONAL SUPPLY,
SO. FRAMINGHAM, Sept. 1, 1874.

J. P. DAVIS, *City Engineer*: —

DEAR SIR: The following is the result of the examination of the water-shed of Lake Cochituate, made in accordance with the instructions received in July last, to ascertain whether the supply of water from that source can be increased, by what means, and to what extent.

At the time of the construction of the Cochituate water-works, the high-water mark of the lake was established 132.36 feet above mean high tide. As soon as it was found necessary to increase the water-supply of Boston, the high-water mark of the lake was raised two feet (in 1859); and, two years afterwards, Dudley pond, with a water-shed of over 500 acres, was connected with Lake Cochituate.

These two additions were secured at a comparatively small cost, and it was then supposed that the effective capacity of the lake had reached its extreme limits.

The territory adjacent to the lake has been examined, however, with a view of obtaining either an increase of its drainage area, or additional storage. Both can be secured; whether in a satisfactory manner the following will show.

Of the tributaries of Lake Cochituate, a few only are susceptible of improvement; Shakum pond cannot be raised; the cost of a dam in the extensive and low meadows and swamps which surround it, would not be justified by the doubtful advantage to be derived from storing the water collected in a limited district; no opportunity for storing water can be found, either on Beaver dam or Course brooks, on

account of the slight fall of their channels from their sources to the lake.

The only possible ways to increase the storage or watershed are :—

1st. To raise the high-water mark of the lake once more.

2d. To construct a dam and form a reservoir in the watershed of Snake brook.

3d. To turn into the lake the drainage of the watershed of Bannister's brook, and to form there another storage reservoir.

RAISING LAKE COCHITUATE.

It has been already stated that the storage capacity of the lake is, at present, large enough in proportion to its drainage area. To add to it is to increase the chances of having a large portion of the bottom of the southern meadows left exposed, which, in the vicinity of as large a town as Natick, may be found objectionable. As early as 1854—consequently before the first raising of the lake—it appears, from the reports of the City Engineer, that there had already been complaints from this cause.

Moreover, it might be a difficult matter to secure the necessary legislation for raising the level. When it was raised two feet in 1859, it seems that the neighboring towns objected, and the Water Board, which had been through the necessary negotiations to attain that end, wrote the following in its Annual Report for 1861 :—

"By the Act of the Legislature of this Commonwealth, of 1860 (ch. 184), the city was authorized to raise the dam at the outlet of Lake Cochituate, to the height of ten feet above the floor of Knight's flume (so called). In accordance with this act the dam was raised, and, in the judgment of the Board, we have now reached the greatest capacity of Lake Cochituate for the supply of water. In case the supply is insufficient, recourse should be had to other sources, which may or may not be connected with this lake.

"To raise the lake any higher will require legislative action, and would be attended with such expense, and with difficulties so great and so numerous, that the Board are decidedly of the opinion that it will be a mistaken policy to attempt it."

In the face of such a statement, of men who had investigated the question more thoroughly than it is possible to do now, without going once more through the same negotiations, it is imprudent to assert that the lake can be raised higher than it is at present.

The engineering problem, however, can undoubtedly be solved if proper legislation can be secured, and all objections removed, as there is no serious difficulty to be encountered in raising the level two feet more. The high-water mark would then be 136.36 feet above mean high tide.

The work to be done in connection with this scheme is as follows:—

The dam at the outlet of the lake must be raised, and the gate-house altered.

The protection of the banks in the upper division must be extended, one culvert rebuilt, and the three roads that cross the lake, raised. Considerable labor must also be spent along the banks to protect property and generally meet the requirements of the case.

The flowage of the lake would extend in Snake-brook valley beyond North Main street. Along Beaver-dam brook it would extend north of the railroad and along Course brook as far as its crossing with Speen street, some distance from the lake.

It is estimated that the cost of raising the level two feet, including land damages, would amount to \$43,300.

The water area would cover 849 acres, instead of 801, as at present.

The increase in the storage capacity				
would be	.	.	.	537,617,500 gallons.
Present capacity	.	.	.	2,011,165,000 “
Total capacity after raising	.	.	.	2,548,782,500 “

RESERVOIR IN SNAKE-BROOK VALLEY.

A storage reservoir, receiving the drainage of about 1,200 acres of the water-shed of Lake Cochituate, can be formed in the lower portion of the valley of Snake brook, by erecting a dam at a short distance east of North Main street. No other opportunity for storing the water can be found farther up the valley, on account of the rapid descent of the brook.

The ground to be covered by the reservoir is good, and well adapted for such a structure; the flowage is satisfactory, the land to be flooded being generally open, and the wet meadows of comparatively small extent.

The water area of the reservoir covers 78 acres, and its extreme depth near the dam measures $19\frac{1}{2}$ feet. The high-water mark is established 153 feet above mean high tide.

The principal objection to the construction of this reservoir is that it covers nearly 2,000 feet of the Cochituate aqueduct, which would consequently be submerged under 26 feet of water. It is obvious that the conduit would then be in a very dangerous position.

The cost of the Snake-brook reservoir, including dam and land damages, is \$79,655.

Its available capacity is 175,792,900 gallons.

BANNISTER'S BROOK DIVERTED INTO LAKE COCHITUATE, AND A STORAGE RESERVOIR TO BE CONSTRUCTED IN ITS WATER-SHED.

Bannister's brook runs in a northerly direction, almost parallel with the northern division of Lake Cochituate, through a small valley, the lower part of which is below the level of the lake, the water being only 129 feet above mean

high tide, at the point where it crosses the Worcester turn-pike. This brook empties into the outlet of the lake, and consequently its water-shed is not utilized.

The meadows situated between Bannister's brook and the lake being only 130 feet above high tide, it was not found advisable, at the time of the construction of the water works, to cover them with only two feet of water. They were artificially drained into Bannister's brook, and a dam was erected on the margin of the lake, almost opposite the keeper's house. At present, these meadows are about four feet below the high-water mark of the lake.

The water-shed of Bannister's brook could be made to drain into the lake, at a small expense, by erecting a shallow dam on the brook, about 300 feet south of its crossing with the Worcester turnpike; but there would be, when the level of the lake is lowered, a large area of shallow and objectionable flowage.

The above scheme having been rejected originally, not without reason, the possibility of combining it with the erection of a storage reservoir has been examined into. The water-shed of Bannister's brook would thus be saved for the lake, and the storage capacity of the reservoir would be more than sufficient to equalize the flow of the brook.

To secure that result, a dam, 20 feet high at its centre, and 600 feet long, must be erected across the brook, near the road from Natick to Saxonville; another dam, 1,600 feet long, and of various heights, must be built on the location of the present one, along the western bank of the lake, and it is to be provided with an overflow, and suitable sluice-gates. The Saxonville road, and the road from Framingham to Cohituate, being considerably below the proposed level of the reservoir, a large amount of labor and material must be spent to bring them up to the proper grade.

The high-water mark has been established 141 feet above mean high tide, on account of the Saxonville branch railroad, and

also on account of the extensive grading to be done to bring the roads to the required elevation.

The water in this reservoir is not supposed to be drawn lower than the actual high-water mark of the lake. Its available storage capacity is equal to 299,370,000 gallons.

The total drainage area of Bannister's brook, above the proposed dam, is 1.13 sq. miles.

Equal to	723 acres.
Water area	181 "
Available water-shed	542 "

It may be observed that the capacity of the reservoir is large when compared with the extent of the water-shed; and, if it was emptied in a dry year, it would require the whole rainfall of an average year to fill it again.

The cost of Bannister's-brook reservoir, including land damages, is \$151,859.

From the above it appears that the cost of raising the lake, and of erecting reservoirs in Snake brook and Bannister's brook valley would be \$274,814.

Below will be found what supply can be expected from such an expenditure.

The water-shed of Lake Cochituate, including

that of Dug pond, covers	12,077 acres.
The area of the water-shed of Dudley pond is	544 "
Total	12,621 "

Deducting the amount of water surfaces re-

duced in a dry year, to	800 "
The available water-shed is at present	11,821 "
Equal to 18.47 sq. miles.	

The available water-shed, if the reservoirs above described

were constructed, and the lake raised, would be different.

The water-shed of Bannister's brook must be added, and the water area of Snake-brook reservoir deducted. It has been found advisable, also, in the following calculations, to deduct from the water-shed of the lake the area which would be withdrawn from it by the diverting of the sewage of Natick into some other water-shed. Natick is constructing its water works, and, before long, the want of a system of sewerage will be felt. Moreover, the amount of sewage matter which is conveyed into the lake by Pegan's brook and the eastern tributary of Dug pond is, and has been for a long time, for good reasons, a source of anxiety for the Water Board, who, as early as 1864, had some surveys made to ascertain whether Pegan's brook could be diverted, and at what cost. The question has been considered again, and the area which would be withdrawn from the water-shed of the lake, by the construction of a system of sewerage, has been found to be equal to 670 acres. A description and an estimate of the cost of a sewer to divert into Charles river the sewage of Natick will be found at the end of this report.

Present area of the available water-shed of

Lake Cochituate, as above	11,820 acres.
Add water-shed of Bannister's brook	542 "
	12,362 "
Deduct area drained by the proposed Natick sewer	670 acres.
Water area of Snake-brook reservoir	78 "
	748 "

Area of available water-shed of Lake Cochituate as it would be

11,614 "

Equal to 18.15 sq. miles.

The storage capacity would be as follows, viz. : —

Lake with surface raised	2,548,782,500 gallons.
Bannister's-brook reservoir	299,370,000 "
Snake brook "	175,793,000 "
Dug pond	150,000,000 "
Dudley pond	250,000,000 "
	3,423,945,500 "

Assuming that in the year of drought 12 inches of rain can always be collected, the total yield of 11,614 acres would be 3,784,445,128 gallons, corresponding to a daily average of 10,368,300 gallons.

A storage capacity of 120 times that amount, viz., 1,244,196,000, has been found by previous experience to be sufficient to equalize the daily flow, leaving a surplus storage of 2,179,749,500 galls.

From this quantity must

be deducted 400,000,-

000 galls., because the

storage of the lake has

always been computed

from a point 3' 4" above

the bottom of the con-

duit, at which height the

flow through the aque-

duct is too small

400,000,000 galls.

Deduct also the storage

of Dug pond, which

will be utilized by the

town of Natick

150,000,000 galls.

550,000,000 galls.

Surplus storage 1,629,749,500 "

Corresponding to a daily average of . . . 4,465,000 "

The amount furnished by 12 inches of rain

on the water-shed was found to be . . . 10,368,300 "

Total daily average 14,833,300 "

A somewhat smaller result is obtained by basing the computation of the average daily yield upon the fact that for a series of eight years the average yearly rainfall collected has been equal to 16 inches, and 14,500,000 gallons has been adopted as the average daily yield that could be obtained in a year of drought from the water-shed of the lake; *i. e.*, about 2,000,000 gallons more than it could furnish at present.

Thus, an extra supply of 2,000,000 gallons can be secured in a year of drought at an aggregate expenditure of \$274,814; but it must be remembered that of the three schemes described, one, the Snake-brook reservoir, ought not to be executed on account of its endangering the aqueduct for a considerable portion of its length; another, the Bannister's brook reservoir, is thought to be too expensive when compared with the benefits to be derived from it; the third, the raising of the lake, if we are to believe the testimony of a former Water Board, cannot be done without meeting great difficulties.

ADDITIONAL WATER SUPPLY FROM NONESUCH POND, STEVENS' BROOK, PICKEREL POND AND MORSE'S POND.

As early as 1854, the constantly increasing consumption of water in Boston had induced the Water Board to consider the expediency of finding an additional source of supply, and it had been then suggested by the City Engineer that water might be stored in Nonesuch pond to increase the flow in the aqueduct in case of need. The same source of supply has been mentioned again recently.

It has consequently been thought proper, in connection with the examination made of the water-shed of the lake, to consider whether any source of supply to be found on the line of the aqueduct could be so improved as to furnish to the city an additional amount of water.

The principal source of supply, and, it is believed, the

only one on the line of the aqueduct that can be improved, is to be found in the water-shed of Nonesuch pond, Stevens' brook, Pickerel pond, and Morse's pond.

Nonesuch pond, situated partly in Natick, partly in Weston, drains a tract of country in area . 2.94 sq. miles.

The drainage grounds of Pickerel, Mud and

Jennings' ponds cover an area of . . . 1.81 “

The rest of the water-shed of Morse's pond, including its water surface, has an

area of 2.98 “

Total area of the water-shed of Morse's pond 7.73 “

The waters of Morse's pond flow through Waban lake and creek into Charles river; if they were to be diverted, some legislation would be required to secure the necessary rights.

The district is but little inhabited and contains much woodland; the lower part of the valley of Pickerel pond is occupied by a swamp which extends on both sides of the Worcester turnpike.

There are great facilities for storing water; a large proportion of the valley of Nonesuch pond can be made an extensive reservoir; almost the whole of the valley of Pickerel pond can be improved in the same manner; the surface of Morse's pond can also be raised 20 feet. The last two reservoirs, however, would be objectionable in one respect, as the conduit would be submerged under their waters, 16 feet in Pickerel pond reservoir, and 8 feet in Morse's pond.

These ponds are so grouped that they could be drawn independently into the conduit, or be in communication, if necessary; but the whole capacity of Morse's pond could not be utilized, on account of its present level being $5\frac{1}{2}$ feet below the bottom of the conduit at Dedman's-brook waste-weir.

These reservoirs, which might be very desirable, if in connection with a large water-shed, would have the following capacities : —

Nonesuch pond raised	.	.	.	1,692,000,000	gallons.
Pickerel pond	"	.	.	1,251,000,000	"
Morse's pond	"	.	.	1,000,000,000	"
Total				3,943,000,000	"

The corresponding water area would be 847 acres, leaving 4,273 acres of available water-shed.

The capacity of these reservoirs (principally of Nonesuch-pond and Pickerel-pond reservoirs) is too large when compared with the area of their water-sheds; it would be difficult to fill them. It is an error to believe that an indefinite increase of the storage capacity can be beneficial; the amount of water kept in store must be proportionate with the average amount of rainfall that can be collected on the drainage grounds.

It has been found, by comparison with the records of the yield of Lake Cochituate for the last twenty years that, in building basins of an available capacity of 1,500,000,000 gallons in this water-shed, a supply of 18 inches of rain can be secured regularly for a similar series of years, the time necessary to fill the reservoirs again after emptying them varying between one and six years.

A storage capacity of 1,500,000,000 gallons has consequently been adopted as meeting the requirements of the case.

To secure this amount of storage room, Nonesuch pond proper will be raised 10 feet and a reservoir will be erected above it. The surface of Pickerel pond will also be raised to grade 143 above mean high tide. The water-shed of the latter being very small, the drainage area of Stevens' brook, from Nonesuch pond to Morse's pond, will be connected

with it by a small reservoir constructed on Stevens' brook and a conduit which will be put in direct communication with the Cochituate aqueduct by proper sluices.

The water from these various sources will be gathered into Morse's pond, which will be raised 12 feet to bring its level to the same height as the top of the Cochituate aqueduct.

In this manner Morse's pond will be utilized as a settling basin, and as a channel to convey the water into the aqueduct, and its storage will not be utilized; it has been deemed proper to adopt that plan rather than to raise the level of the pond above the conduit.

ESTIMATE OF COST.

Nonesuch pond is to be raised 10 feet; its actual elevation above mean high tide is 165.73 feet. It is shallow and surrounded by generally steep hills. The raising being limited to 10 feet, the flowage is good; no road is flooded, no house touched.

Its cost, including land damages, is, \$60,720.

Its available capacity, 180,000,000 gallons.

Its water area, 112.97 acres.

The reservoir above Nonesuch pond is formed by the erection of a dam 20 feet high at the inlet of the pond; two small dykes are also required.

This district is covered with woods, but would give a good flowage.

The cost, including land damages, is \$69,245.

The available capacity 450,000,000 gallons.

The water area, 195 acres.

Pickerel pond is situated in a wide and swampy valley crossed by the Worcester turnpike and surrounded by steep hills.

The flow line is established 143 feet above mean high tide, *i. e.*, 10 feet below that of Snake-brook basin; the average depth is 13 feet.

In this case, the Cochituate aqueduct would be 16 feet under water for a considerable distance, and the Worcester turnpike raised for nearly 3,000 feet.

The land is not valuable, a great portion being swampy and covered with brush; two dykes, one at Oak street, the other north of Pine street, must also be erected across the trench in which the aqueduct is constructed.

Cost, including land damages, \$131,332.

Available capacity, 850,000,000 gallons.

Water area, 281.6 acres.

It might be said that instead of erecting three reservoirs, viz., one at Nonesuch pond, one above it, one at Pickerel pond, at a cost of \$261,297, it would have been preferable to omit the last reservoir, which is objectionable in some respects, and to raise Nonesuch pond to the level of the reservoir located above it, thus creating, at a somewhat smaller cost, a large basin of 400 acres, containing nearly 1,700,000,000 gallons.

But Pickerel pond is necessary, to catch, through Stevens' brook, the drainage of nearly two square miles of water-shed, which, otherwise, could not be stored, thus reducing considerably the amount of water to be obtained from the source.

Morse's pond has been included in the scheme, because, if it was excluded, more than a square mile of water-shed would be lost. A rise of 12 feet will bring the flow-line to the height of the top of the aqueduct. This reservoir will be kept full, and, as it receives the drainage of all the others, it will be directly connected with the conduit.

The cost, including land damages, of improving Morse's pond and raising the Worcester turnpike, is \$74,900.

Cost of regulating reservoirs on Stevens' brook	\$27,000
“ of conduit between Stevens' brook and Pickerel pond	} \$57,000
“ of connecting chamber on Cochituate aqueduct	
“ of gate-house on Morse's pond . . .	

It has been said before that, with the proposed storage, 18 inches of rainfall could have been secured on the water-shed for a series of 20 years.

That amount of rainfall, on an available water-shed of 4,336 acres, gives 2,119,337,000 gallons, corresponding to a daily supply of 5,806,400 gallons per day.

If the average daily yield is calculated on the basis of a series of eight years, with an average collectible rainfall of 16 inches, it is found that the storage is larger than necessary to equalize the flow, and that, in increasing the average daily yield by the quantity to be derived from that surplus storage, the daily supply is equal to 5,650,000 gallons.

5,700,000 gallons per day has been adopted as being the average daily supply to be obtained in a dry year from the water-shed.

This quantity, added to the average daily supply to be obtained from Lake Cochituate, viz., 14,500,000 gallons, gives a total supply of 20,200,000 gallons, that can be obtained from both sources combined.

This amount of water cannot be conveyed to Chestnut-hill reservoir through the Cochituate aqueduct; an additional one must be provided for that purpose, and it must be made large enough to convey, together with the former, the amount of water supplied in an average year, or a large part of it, and to be used alone temporarily in case of accident and repairs to the other. It is desirable, also, to build a conduit large enough to admit men for the purpose of examination and repairs.

Consequently, the required conduit has been supposed to be of the same size as the Cochituate aqueduct.

Although no actual survey has been made for a new line, it seems that there is no other resource than to follow the line of the Cochituate aqueduct at a safe distance.

The construction of a conduit on this line cannot meet with as many objections as it did formerly when it was a

question of building an additional aqueduct from Lake Cochituate to Chestnut-hill reservoir, because the most objectionable portion of the route, *i. e.* from the lake to Dedman's brook, is not to be considered. It would be, however, an unsatisfactory and expensive undertaking.

The line has been so located as to avoid the immediate vicinity of the aqueduct, and enough margin has been left, in any case, not to endanger its safety during construction.

The cost of the conduit is \$1,608,000.

The cost of improving the water-shed of Morse's pond is consequently as follows : —

Reservoirs and gate-houses	\$420,197
Main conduit	1,608,000
Total	<u>\$2,028,197</u>
The cost of works on the Cochituate water-shed is	<u>\$274,814</u>

Expenditure necessary to secure an average supply of 20,000,000 gallons per day in a year of drought	\$2,303,011
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The amount of work to be performed to obtain that result is large ; it includes the raising of Lake Cochituate, the construction of seven reservoirs, of a conduit and gate-houses, and 200,000 cubic yards of earth must be applied to the regrading of roads ; it has been found impossible to so utilize the storage room to be found in Morse's pond water-shed as to save the water which is wasted at the overflow of Lake Cochituate, and it must be remembered that many features of the complicated and expensive scheme hereinbefore described have been found very objectionable. Some of them might have been eliminated, but the available water supply would have been lessened, and it has been deemed proper, in the

present circumstances, to show the *extreme limits* of the capacity of the water sources.

Another plan, however, might be suggested, by which an additional supply could be procured at a considerably smaller cost, sufficient to secure a constant flow of 17,000,000 gallons in the Cochituate conduit in a dry year.

Nothing, in this case, would be done in the water-shed of Lake Cochituate; the level of Nonesuch pond, which drains nearly three square miles, would be raised $22\frac{1}{2}$ feet above its present surface, and a large reservoir of 1,700,000,000 gallons would be formed; the natural flow of a portion of the drainage area of Stevens' brook would also be utilized. An additional water-shed of 4.40 square miles would thus be secured.

In a dry year the contents of the storage basin, combined with the natural flow of the available water-shed, would furnish a total volume of 2,518,000,000 gallons, which, being distributed throughout the year, would more than compensate for the deficiency of the supply from Lake Cochituate.

If the dry year were to be followed by a series of eight years during which the average amount of rainfall collected would not be above 16 inches, as has been the case once, before the construction of the Cochituate water works, the additional water-shed and storage reservoir combined, could keep up the supply of 17,000,000 gallons per day.

The water of Stevens' brook being of a superior quality, probably no inconvenience would be felt from the fact that a large proportion of it would enter the conduit without first having been purified by storage.

The proposed reservoir is supposed to be connected with the Cochituate conduit by means of an intermediate reservoir of small capacity, built on Stevens' brook, and a proper system of gates and overflow.

The cost of the reservoir and appurtenances is estimated at \$210,000.

NOTE. — The estimates do not take into account the mill damages.

SEWERAGE OF NATICK.

Reference has been made, in another part of this report, to a system of sewerage for the town of Natick.

This question has been investigated, at your request, and some surveys have been made to find the best location, and estimate the cost of a sewer of sufficient capacity to divert from Lake Cochituate the sewage of the town.

The investigation has been limited to the most thickly populated portion, situated at the south end of the lake.

The drainage of Natick is conveyed to Lake Cochituate by two principal channels, viz. : Pegan's brook and the eastern tributary of Dug pond. A plan was proposed, in 1864, for diverting Pegan's brook into Bannister's brook through a brick sewer, 3 feet in diameter, 14,000 feet long, and built around the lake; but the town has grown since, and the introduction of water will soon increase the volume of its sewage;* consequently, a complete system of sewerage ought to include, beside Pegan's brook, the eastern tributary of Dug pond, which flows through a district already much built upon.

The diverting of this brook, however, is much more important for Natick than for Boston, because the sewage matter conveyed by it flows into Dug pond, near the point where the pumping engines are to be established, thus endangering the purity of the water-supply of the town; for Boston, the circumstances are different. The water-supply of Natick being derived from the pond, the amount of water that will hereafter flow from Dug pond into Lake Cochituate will be small, and that small quantity, if polluted, will be diluted and purified to a large extent by its passage from the south end of the lake to the gate-house.

Consequently, it may be said that both brooks must be

* The water supply will be taken from Dug pond; the works are in course of construction.

diverted: Pegan's brook, to secure the purity of the water of the lake; and the eastern tributary of Dug pond, to prevent the pollution of the water supply of Natick.

It has been deemed proper to provide a single channel for diverting the two streams, and the sewage is to be discharged into Bacon's brook, a tributary of Charles river, which it meets a short distance above South Natick.

The water-shed of Pegan's brook has an area of 265 acres, 75 of which are below the level of the proposed sewer and must continue to drain into the lake.

The portion of the water-shed of Dug pond which should be diverted is equal to 480 acres; the rest is very sparsely inhabited, and will not probably be built upon for many years.

Thus the amount of water-shed which would be withdrawn from the lake is equal to 670 acres.

Various routes have been examined for the location of the sewer. The first, the lowest and the most satisfactory for a complete drainage is connected with Pegan's brook below the gas works, then follows Washington avenue, Maple and Waban streets, crosses Main and Cottage street near Walcott street, then Woodland street, thence to Bacon's brook. The excavations are deep on that line; a large amount of rock would be encountered, and the estimated cost is above \$150,000.

The cost of the above plan being very high, another has been studied, in which the starting point has been taken five feet higher; it excludes from the sewered territory a small area, the drainage of which is, unfortunately, of an objectionable character, the district being thickly populated, and containing some manufacturing establishments, among which are the gas-works. The latter, however, might be so altered, at a small cost, as to drain their refuse into the proposed sewer.

This route, via Spring, Plain and Main street, can be followed at less cost; the excavations are of a more satisfactory character, and it is thought to be the most desirable.

A brick sewer, three feet in diameter, has been adopted for the first and shorter portion of the proposed line, with a descent of one foot per 1,000 feet; for the balance of the line the diameter of the sewer is increased to five feet with an inclination of two feet in a thousand.

The estimated cost is \$107,000, not including land damages.

If it was found advisable to limit the sewerage of Natick to the water-shed of Pegan's brook, according to the course followed by the City Engineer in 1864, the cost of a three-foot sewer, constructed on the same route as recommended for a more comprehensive plan, would be \$85,400.

Respectfully submitted,

A. FTELEY,

Resident Engineer.

APPENDIX B.

REPORT

OF

MR. D. W. CUNNINGHAM,

ON

INCREASING THE SUPPLY FROM

MYSTIC LAKE.

APPENDIX B.

OFFICE OF BOSTON WATER WORKS, ADDITIONAL SUPPLY,
SOUTH FRAMINGHAM, August 21, 1874.

JOSEPH P. DAVIS, ESQ., *City Engineer*: —

SIR: About the last of June you instructed me to make surveys of the lower Mystic pond, and lands that would be covered by flowing to the height authorized by an act of the Legislature of June 25th, this year; to locate the dam and make an estimate of the cost of such flowage; also to re-examine all the valley as to its capability for storage, and the relation between the drainage area and capacity of each storage basin, with a view to ascertaining the quantity of water which may be obtained in a year of drought, for use in Boston; also to present a scheme to you with estimates of cost of the works to get the supply to Boston, and to furnish you with any facts I might obtain bearing upon the subject.

Owing to the variety of other work given to the engineers of the "Additional Supply" at this time, only a small party was available for these surveys, and the time necessarily occupied in procuring information, facts and statistics will account for my inability to report to you sooner.

I hand you, with this, plans, showing flowage of the lower Mystic, the North Woburn storage basins, and a plan of a part of the Lowell Railroad, with profile, showing how it would be damaged by building the large reservoir on the Abajonna river, and two schemes for its protection.

In order to plan a scheme of works, it becomes necessary, first, to ascertain what quantity of water may be at *all times* available; this involves a knowledge of the least rainfall and percentage collectable.

It will, however, be superfluous for me to demonstrate, by a list of the dry years recorded in the neighboring towns, that for a year of drought we may not count on more than 30 inches of rainfall, and that but 40 per cent. of this can be collected for use.

I shall therefore consider that this point has already been proved, and assume that 12 inches of annual rainfall is the yield of the district in a year of drought.

The drainage area of the upper Mystic, as found by accurate survey, is 27.75 square miles; to obtain the quantity of water which may be had from this area, without the lower pond, we will deduct the area of the water surfaces, or 1.58 square miles, and there remain 26.17 square miles; 12 inches of water on this area is equal to 5,457,632,400 gallons annually. This would be equal to 14,952,418 gallons per day.

The storage capacity necessary to utilize this amount must be equal to 1,690,208,272 gallons, or to a supply for 113 days, as shown by table, page 67.

All the proposed storage reservoirs in the valley draining into the *upper Mystic* have an aggregate capacity of 2,668,908,476 gallons; the difference between these two quantities, minus the surplus storage in the Winchester Water Works reservoir (which is not under the control of the city), is 747,022,850 gallons, which will furnish a daily supply of 2,046,638 to add to the rainfall in a dry year; therefore $14,952,418 + 2,046,638 = 16,998,056$ gallons, which will be the total yield of the upper Mystic with all the storage in a year of drought.

The drainage area of the *lower Mystic pond*, as ascertained by approximate survey, is 5.63 square miles; this added to that of the upper pond gives 33.38 square miles, deducting

from which the water surfaces of all the ponds and proposed reservoirs, or 2.18 square miles, and there remain 31.20 square miles, as the total available area of water-shed. Twelve inches of water on this area is equal to 869,849,640 cubic feet, or 6,506,475,307 gallons, annually. This will furnish a daily quantity of 17,825,960 gallons, providing the storage capacity is sufficient to utilize the surplus of the rainy months.

The storage capacity necessary to utilize this quantity of water must be equal to 2,078,673,517 gallons, or to a supply for 116 days.

All the reservoirs which can be built in the whole valley have a total storage capacity of 3,426,317,142 gallons; this will admit of carrying over from the average year for use in the dry year 3,426,317,142 — 2,078,673,517 (less the surplus storage of the Arlington and Winchester Water Works reservoirs, which are not under control of the city), or 926,144,720 gallons; an additional daily supply of 2,537,383 gallons.

If, therefore, all the storage reservoirs shown in the accompanying schedule are built, we may estimate the daily yield of the whole Mystic valley, including both the upper and lower ponds, as $17,825,960 + 2,537,383$ gallons, or 20,363,343 gallons per day.

Tables showing Areas and Capacities of Basins in Mystic Valley.

No.		WATER AREA.	TOTAL CAPACITY.	DRAIN'GE AREA.	CONDITION OF BASIN ON NOV. 1st.
		<i>Acres.</i>	<i>Cubic feet.</i>	<i>Sq. miles.</i>	<i>Cubic feet.</i>
1	West Branch	43	16,711,200	2.82	3,000,000 left in.
2	" "	112	48,732,620	3.36	10,000,000 " "
3	Horn pond	144	37,408,640	1.24	Drawn down.
4	East Branch	46	20,415,900	2.00	7,000,000 left in.
5	" "	86	16,160,570		
6	" "	323	137,637,016	9.69	45,000,000 " "
7	Upper Mystic lakes and Winter pond	246	44,987,000	7.93	Drawn down.
	Winchester Water Works	60	34,763,000	0.71	
8	Lower Mystic lake and Mill ponds in Arlington . . .	181	37,621,460	2.51	Drawn down.
	Two Arlington reservoirs	204	63,636,363	3.12	21,200,000 left in.
		1,395 acres.			
		2.18 sq. miles.	458,063,789	33.38	86,200,000 left in.

The following tables have been prepared to show the action of the storage basins, and the relation of their capacity to the drainage area, and the service which they perform during the months of drought. The proportion flowing off is assumed from the proportion observed to have flowed off for each month, during the year of greatest drought, recorded both in the Cochituate and in the Croton valleys : —

THE UPPER MYSTIC AND THE EAST AND WEST BRANCH BASINS.—(See preceding page.)

SHOWING MONTHLY CONDITION IN A YEAR OF DROUGHT. WATER UTILIZED ASSUMED AT 12 INCHES.
(Water area 1.58 square miles. Water shed area = 27.75 square miles. Available rainfall equal to 729,630,000 cubic feet, or 5,457,632,400 gallons per year, or 14,952,418 gallons per day.)

MONTHS.	WATER FLOWING OFF. ASSUMED.	AMOUNT OF RAINFALL COLLECTED FOR THE MONTH.	AMOUNT APPLIED TO USE.	AMOUNT APPLIED TO STORAGE.	AMOUNT DRAWN FROM STORAGE.	AM'T OF WATER IN STORE. TOTAL STORAGE CAPACITY, 356,805,946 CU. FEET.	SURPLUS STORAGE.
	<i>Inches.</i>	<i>Cubic Feet.</i>	<i>Cubic Feet.</i>	<i>Cubic Feet.</i>	<i>Cubic Feet.</i>	<i>Cubic Feet.</i>	
January	1.36	82,688,968	75,596,964	7,092,004		125,617,660	
February	1.68	102,148,290	70,941,925	31,206,275		156,823,935	
March	1.60	97,281,568	64,337,144	32,884,424		189,708,359	
April	1.20	72,963,000	51,438,915	21,524,085		211,232,444	
May	1.12	68,103,664	53,372,434	14,731,230		225,963,674	130,842,272
June	0.40	24,318,568	59,165,697		34,847,129	191,116,545	39,972,907 Winchester W'cks.
July	0.24	14,592,600	63,660,218		49,067,618	142,048,927	99,893,365 cu. feet per year.
August	0.40	24,318,568	63,689,403		39,370,835	102,678,092	747,022,950 galls. per year.
September	0.48	29,185,200	59,216,771		30,031,571	72,646,521	2,046,638 galls. per day.
October	0.80	48,644,432	56,290,953		7,646,521	65,000,000	14,952,418 galls. per day.
November	1.44	87,555,600	52,642,805	34,912,795		99,912,795	16,998,056 galls. per day.
December	1.28	77,829,632	59,216,771	18,612,861		118,525,656	
				65,000,000			
				118,525,656			

TOTAL UPPER AND LOWER MYSTIC BASINS. — (See page 66.)

SHOWING MONTHLY CONDITION IN A YEAR OF DROUGHT. WATER UTILIZED ASSUMED AT 12 INCHES.
 (Water area, 248 sq. miles. — Water-shed area, 33.38 sq. miles. — Available rainfall equal to 809,849,640 cubic feet, or 6,506,475,307 gallons per year, or 17,825,960 gallons per day.)

MONTHS.	WATER FLOWING OFF. ASSUMED.	AMOUNT OF RAINFALL COLLECTED FOR THE MONTH.	AMOUNT APPLIED TO USE.	AMOUNT APPLIED TO STORAGE.	AMOUNT DRAWN FROM STORAGE.	AM'T OF WATER IN STORE. TOTAL STORAGE CAPACITY 458,063,789 C. FT.	SURPLUS STORAGE.
	Inches.	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i> 149,812,169.	
January	1.36	98,580,060	90,125,121	8,454,939		158,267,108	
February	1.68	121,778,950	84,575,480	37,203,470		195,470,578	
March	1.60	115,977,052	76,772,929	39,204,123		234,674,701	
April	1.20	86,984,961	61,324,400	25,660,564		280,335,265	
May	1.12	81,191,765	63,629,501	17,562,264		277,897,529	180,166,260
June	0.40	28,992,088	70,536,107		41,544,019	236,353,510	56,350,121 Win. & Arl. W'ks.
July	0.24	17,396,993	75,894,381		58,497,383	177,856,122	123,816,133 c. ft. per year.
August	0.40	28,992,089	75,929,175		46,937,086	139,919,036	926,144,720 gallons per year.
September	0.48	34,793,986	70,596,997		35,803,011	95,116,025	2,537,383 " " day.
October	0.80	57,999,875	67,108,900		9,116,025	88,000,000	17,825,960 " " "
November	1.44	104,381,957	62,752,652	41,622,305		127,622,305	20,363,343 " " "
December	1.28	92,789,861	70,536,997	22,189,864		149,812,169	
				86,000,000			
				149,812,169			

In order to estimate what quantity of water may be available, to cross the Charles river, for the use of Boston proper, after deducting the consumption of all the towns now dependent upon it, we must look first at the actual daily consumption.

In 1873, Mystic Works supplied an average daily quantity of	7,755,634
In 1873, Woburn, as given by their Water Board	840,000
In 1873, Arlington, as given by their Water Board	500,000
Average daily gallons	9,095,634

The rate of increase by the Mystic Works previous to 1872 was greater than it probably will be in the future, as the extension into new territory will not continue as rapidly as it has done.

The increase of consumption from 1872 to 1873 was 15 per cent; if we estimate the increase of 1874 as 14 per cent., of 1875 as 12 per cent., and of 1876 as 10 per cent., the consumption of 1876 will be . . . 10,646,232 galls.

The consumption of Woburn for 1876 will be* 1,250,000 “

The consumption of Arlington for 1876 will be 700,000 “

The consumption of Winchester for 1876 will be 350,000 “

The consumption by the fishway from gaugings 500,000 “

Total consumption	13,446,232 “
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* The consumption of water in Arlington can hardly be measured by the ordinary consumption per head of population, as they are now supplying about 40 market gardens with water for irrigation through the summer, and I am informed by one of their commissioners, that he has for some days estimated the consumption by farmers for this purpose as high as one million gallons per day. The same is true of Woburn, though to a less extent, the consumption here being very large, owing to the free use of hand-hose for garden purposes.

The quantity available from both ponds would therefore be equal to the total quantity of		20,363,343 galls.
Less the consumption of		13,446,232 “
		6,917,111 “
Or in case of the upper pond alone, to the total quantity of		16,984,301 “
Less the consumption of		12,746,232 “
		4,238,069 “

SEWERAGE AREAS.

A considerable portion of the territory draining into the Mystic ponds will soon require sewerage, and this portion should be deducted from the drainage area which has just been counted upon for a supply of water.

It is a matter of judgment to determine what area of town surface actually needs sewerage; practically it is increasing from year to year, and I have anticipated the present requirements as little as is possible in an approximate estimate of the scheme.

These I have computed to be as follows:—

Woburn Centre	1.61 square miles.
East Woburn	0.25 “ “
Cummingsville	0.25 “ “
Part of Stoneham	0.90 “ “
Part of Winchester	0.30 “ “
	3.31 “ “

If we suppose the 12 inches available rainfall on this area to be carried off to the sea by the sewers, it would still further reduce the quantity of water available for Boston by 1,890,100 gallons daily, showing as the final result 6,917,111 — 1,890,100 = 5,027,011 gallons.

THE STORAGE RESERVOIRS.

Basin No. 1, at the head of the west branch, has an average depth of about 13 feet on the meadows, and a surface area of 43 acres; about 10 acres of this were formerly Kendall's Mill pond. The changes caused by flowing are 1,550 feet of Lexington street to be regraded, and Cambridge street altered to cross over the dam.

Basin No. 2, just above Horn pond, has a surface area of 112 acres, and will have an average depth of about 14 feet over the meadows. A large part of the bottom is a meadow, from which the muck should be removed.

Changes caused by flowing: one house and two barns to be raised and 2,700 feet of road to be regraded.

Basin No. 3, Horn pond, raised six feet.

It was thought in 1873, when the preliminary examinations were made, that it might not be advisable to raise this pond, on account (among other reasons) of the porous and gravelly nature of its bottom; but on further study of the question and observations of Winter pond, where the case is analogous, this being 12 feet above Horn pond and 20 feet above Wedge pond, with subterranean outlets (probably through this same gravel stratum), I observe, that notwithstanding its very small drainage area, of but $\frac{9\frac{1}{2}}{100}$ square miles, there always remains a good body of water, the fluctuations being only about three feet in the height of its surface; the inference is that the friction in the gravel holds it back, as it would also in Horn pond. Sheet piling being driven the length of the dam and below it would stop the passage through the valley of the stream.

Damage. The principal damage caused is to the ice-houses and railroad tracks of the Boston Ice Co., which would have to be raised three or four feet. I have obtained estimates for raising the houses, from a building-mover of large experience, and from ice-merchants the data necessary to determine the damage on account of ice in store.

The Woburn engine house was built, as Mr. Tidd, the engineer, informs me, with reference to this raising.

Basins No. 4 and 5, in North Woburn, near the head of the east branch, will make excellent storage; the flow line of the upper one having ten feet the greater elevation, its surplus will overflow into the adjoining lower one, requiring for the separation a dam of only 150 feet extreme length. The general depth of the upper basin would be from 12 to 15 feet, and of the lower one about 12 feet.

The only change, except flooding of land, is the removal of a small soap factory.

Basin No. 6, on the *Abajonna river* in East Woburn. Surface area, including Richardson's pond, which is at the same level, 323 acres.

In order to secure sufficient depth of water to make this basin available, we must either suppose the Lowell Railroad to be raised six feet, or else a dyke 4,500 feet long to be built on the east side of the railroad, to dam the waters back from it.

The estimates I have made for raising this section of the railroad amount to \$188,262.

A substantial dyke, and brick drain from the enclosed drainage area, would, I believe, answer the purpose without damage to the railroad, and would cost, by my estimates, \$109,025. The accompanying plan and profile will explain this scheme, which is the one I adopted.

The damage to other property and to roads is quite large in this basin.

6 manufacturing establishments.

17 dwelling-houses.

7 barns.

5,600 lineal feet of common road to be changed.

The general depth in the upper part of this basin, above Salem street, will be from 6 to 10 feet; the depth in the southern half below Salem street, from 8 to 16 feet. I have

estimated for removing a portion of muck, which will slightly increase these depths.

The area of land flowed less than five feet will be 55 acres.

Basin No. 8, Lower Mystic pond, raised $6\frac{1}{2}$ feet.

The area of upland flowed is 17.1 acres, the area of meadow land, 25.5 acres. Total, 42.6 acres.

The most objectionable flowage is that of the meadows of Mill brook, towards the centre of Arlington, where about 10 acres of meadow land will have but from two to four feet of water to cover them. The meadows are quite near to the village, and I first estimated the cost of filling them with gravel for building purposes, but have found it will be more economical and quite as ornamental to remove the muck so as to make a fair depth of water.

The damage to the gas-works, which must be raised about four feet, would be considerable, and the process of raising, while in operation, somewhat expensive. I learn from the superintendent that, owing to small main-pipes, they are now but just able to supply their distant customers on the low lands of Winchester, in a satisfactory manner, their gas-holder at the works being rather light for the purpose; he claims, and I believe justly, that to raise the works would require either larger mains or a heavier holder. In making my estimate of the cost of this item, I have consulted with him as to the details.

Mill brook is the only additional tributary of the lower Mystic of any consequence. This has a drainage area of over five square miles, more than half of which is used for the supply of the town of Arlington; they have one reservoir of 32 acres already built on it and in use, and are now contemplating the project of building another one of 172 acres on the "Great Meadows," so called, higher up on the stream; the object of the increase being, as I learn, principally for the sale of the water to market gardeners for irrigation.

This stream has a very rapid fall, being extensively used for power by the following manufacturing establishments.*

Commencing at the foot, we have,—

The Arlington Gas Works, ...	0 feet fall
Fowle's Drug Mills, grinding drugs and spices, ...	19 " "
Cutter's Mills, fancy wood-work	19 " "
Welch & Griffith's saw factory	19 " "
Schouler's print works	19 " "
A. C. Hobbs & Sons, machine shop	19 " "
Theodore Swamb's piano-case factory	19 " "
Charles Swamb's picture-frame factory	34 " "
Lewis' fur-dressing establishment	16 " "
	164 " "

SCHEME OF WORKS.

The brick conduit of the Mystic Water Works will convey about 25,000,000 gallons per day, running under one foot of head at the lake, and the two 36-inch pipes crossing under the river will convey as much; we may therefore consider that the available water is already at the engine house.

The existing engine building was enlarged in 1871, and there is now just room enough to place another 8,000,000 Worthington pump in the south end; but as the building would then be very much crowded, and there would be no room for repairs, and not enough for additional boilers, I have estimated for the enlargement necessary for this purpose.

To increase the pumping capacity, I have, for economical motives and to avoid the expense of a new engine house, estimated for one additional 8,000,000 Worthington engine, as explained above.

A new 30-inch force-main is provided for, leading to a stand-pipe in the reservoir grounds, and thence, by a

* This information, was given me at Cutter's mills.

The elevation of the present Arlington reservoir, as stated to me by one of the Water Commissioners, is 170 feet above mean low water.

30-inch supply-main, via Somerville and Charlestown, to the northerly side of Warren bridge, there connecting with the Boston pipes.

The new pump is intended to pump only into the new force-main ; but branch-pipes are so planned with gates, that the existing large engine may be made to pump, as necessity may require, into either force-main.

A stand-pipe is to be so placed that the new 30-inch pipe may be used independently of the reservoir for a Boston supply, or by means of gates may be made to pump into the reservoir for use of any or all of the supply pipes. By the use of the stand-pipe, disconnected from the reservoir, the Mystic water may be made to accommodate itself to the lower pressure in the Boston pipes, without drawing down the head in the Mystic pipes.

DELIVERY OF WATER TO BOSTON.

To ascertain the flowing capacity of the old 20-inch pipe crossing Warren bridge, I have taken a number of observations of the pressure in the Boston and Charlestown main pipes where the connection would be made, at various hours of the day and night, a tabular statement of which accompanies this, and find that with a 30-inch pipe laid through Charlestown, to a point near the bridge, the 20-inch pipe would deliver, with such loss of head as may be considered admissible, from five to seven million gallons per day. By making use of this pipe, a saving is effected of 30 or 40,000 dollars. The works as planned will be available for the increase of consumption north of Charles river.

Record of Gaugings taken upon the Charlestown Main-Pipes and 24-inch Pipe in Union St., Boston.

DATE.	HOUR.	CHARLESTOWN.		BOSTON.	Difference of head in feet.
		On 30 in. main. cor. of Cambridge and Canal. Press. in pounds.	On 16 in. main. City square, cor. of Chelsea street. Press. in pounds.	On 24 in. main. Union. intersect'n of Hanover st. Press. in pounds.	
Friday, June 26	5 P.M.	...	56	...	..
Satur. " 27	7 A.M.	...	56	...	..
" " 27	8½ "	56	...	...	..
" " 27	9.50 "	...	...	38	41.4
Monday, " 29	Midnight	57½	57½	48	21.85
Tuesday, " 30	1 A.M.	...	...	48	21.85
Mon. July 20	8 "	...	53	...	..
" " 20	8.40 "	55	...	...	..
" " 20	9 "	...	...	38	39.1
Satur. Aug. 15	3.20 P.M.	...	...	40	..
" " 15	4.30 "	...	55	...	34.5
" " 15	3.40 "	...	55	...	34.5
" " 15	4.10 "	57	...	...	39.1
Mon. " 17	7.40 A.M.	...	...	38	..
" " 17	8.05 "	...	54	...	36.8
" " 17	8.25 "	56	...	...	41.4

The estimated costs of all the storage basins required to utilize the waters of the Mystic are as follows:—

Storage basin No. 1, on West branch . . .	\$98,976 00
" " " 2, " " . . .	177,915 00
" " " 3, Horn pond raised 6 feet . . .	119,043 00
" " " 4, on East branch . . .	74,594 00
" " " 5, " " . . .	93,014 00
" " " 6, " " . . .	671,936 00
" " " 8, Lower Mystic pond . . .	200,374 00
Total cost of all the basins . . .	\$1,435,852 00

Approximate cost of introducing the water into Boston :—

One 8,000,000 gallon Worthington engine, with alterations and additions to engine house	80,000 00
30-inch force-main, stand-pipe in the reser- voir grounds, gates, check-valves and connections	57,850 00
30-inch cast-iron pipe, from reservoir grounds, to connect with Boston distribution .	255,640 00
	\$393,490 00
Cost of all basins and other works . . .	\$1,829,342 00

Respectfully submitted,

DAVID W. CUNNINGHAM,
Prin. Assistant Engineer, New Supply.

APPENDIX C.

REPORT

OF

MR. A. FTELEY,

ON

WASTE AT THE MYSTIC DAM.



APPENDIX C.

OFFICE OF BOSTON WATER WORKS, ADDITIONAL SUPPLY,
SO. FRAMINGHAM, Aug. 22, 1874.

J. P. DAVIS, ESQ., *City Engineer*:—

DEAR SIR: Agreeably to the instructions received from you in the beginning of July, I have made some experiments to measure the flow of water from Mystic lake.

Before commencing them, I placed myself in communication with Mr. T. Doane, whose services had been retained by the Mystic Water Board, to investigate the same question. We have worked together, and I am authorized to say, that we agree on the result of the gaugings hereinafter described.

The amount of water distributed and consumed in Charlestown, and the other towns depending upon the former for their supply, has been measured by the working of the pumps. A record of the time during which the pumps are in operation, of the number of pumps at work, and of the number of strokes made by them, is kept at the engine-house; and, having been allowed to consult it, I have derived directly from that source the portion of the yield of the lake which is consumed for domestic purposes.

A considerable proportion of the water which flows from Mystic lake is wasted over the regulating weir located at the head of the conduit near the gate-house. With the exception of certain periods, when no waste could be allowed, on account of scarcity of water, there has been, since the construction of the water works, a constant flow of water over it.

To measure that waste, a temporary weir has been erected at the outlet of the overflow-chamber, and the amount of water corresponding to the various circumstances of the case carefully computed. The record of the working of the pumps, already alluded to, has been again used to take into account the amount of water which is wasted, when pumping is stopped for a time, without any corresponding reduction of the opening of the head-gates.

A large portion, usually the largest, of the water gathered into Mystic lake is wasted every year over the flash-boards connected with the dam. A record of the depth of water over them, when the lake is overflowing, has been kept by the Superintendent of the Mystic Water Works, from day to day since their construction.

From that source, by a system of comparative experiments, has been deduced the amount of water corresponding to the various depths recorded.

The method heretofore used for measuring the depth of water over the flash-boards, and the irregularities resulting necessarily from the friction of water against rough walls and boards which are not intended for accurate measurements, made it desirable to devise a special apparatus, to receive the flow of water and to measure it accurately.

Accordingly, a flume and weir have been built in one of the openings of the dam, of sufficient capacity and tightness to receive the whole of the water flowing through the same opening.

Thus the flow corresponding to each depth of water over the flash-boards has been computed with the following results : —

Depth of water at middle of flash- board.	Flow of water through 5 openings of the dam, in gals. per 24 hrs.	Depth of water at middle of flash- board.	Flow of water through 5 openings of the dam, in gals. per 24 hrs.
$\frac{1}{2}$ inch	1,992,811	5 inches	39,425,333
1 "	5,547,554	$5\frac{1}{2}$ "	45,619,203
$1\frac{1}{2}$ "	6,193,871	6 "	50,623,159
2 "	11,903,003	$6\frac{1}{2}$ "	59,568,877
$2\frac{1}{2}$ "	13,357,217	7 "	66,516,784
3 "	17,612,136	$7\frac{1}{2}$ "	74,003,288
$3\frac{1}{2}$ "	22,782,672	8 "	87,575,944
4 "	25,583,378	$9\frac{1}{2}$ "	102,441,233
$4\frac{1}{2}$ "	31,831,109		

The fishway connected with the Mystic dam wastes also every year an amount of water which has been measured in the same manner; to that end, the flow through the fishway has been regulated, as usually done by the Superintendent at various periods of the year, and turned into the gauging flume.

During the experiments, the leakage through the flash-boards and walls of the dam has been so measured as to estimate the waste which takes place in that manner when there is no water overflowing.

The experiments at the dam, commenced on July 13th, have been continued without interruption until the 25th, and have been repeated in each case a sufficient number of times to secure an accurate result; more time has been spent in experimenting on the conduit overflow, etc., and the accuracy of the gaugings has been confirmed by the regularity of the results obtained.

It has been said that the records kept by the Mystic Board have been consulted in some cases. Whenever more information has been found necessary, it has been furnished by the superintendent of the works.

From the results of the experiments above described, the

flow of the Mystic lake can be calculated for any period since the construction of the works; but, understanding that you want, at present, to collect all facts tending to ascertain the yield of its water-shed in a year of drought, I have applied the results of the gaugings to the dryest year on the record, *i. e.* 1871.

Total yield for the year 1871.

	Gallons per year.	Average daily yield in galls.
Flow over dam, including leakage	3,658,757,165	10,023,992
“ at conduit overflow	496,732,690	1,360,911
“ through fish-way	181,892,928	498,537
Amount pumped	1,834,709,550	5,026,602
Surplus in lake at the end of the year	56,747,030	155,471
Totals	6,223,839,361	17,065,313

A daily yield of 17,065,313 gallons represents 12.92 inches of rainfall collected on the whole area of the water-shed.

The rainfall, as recorded by the gauge of the Mystic Water Works, having been equal in 1871 to 29.9 inches, the amount collected was apparently 43.2 % of the total rainfall, which is a large percentage in a year as dry as 1871.

The percentage of rainfall collected during the same year in the water-shed of Lake Cochituate was 32 %.

Had the rainfall in Mystic water-shed been equal to the average of Cambridge, Waltham and Lake Cochituate for the same year, viz., 41 inches, the proportion collected would have been exactly equal to that observed in the water-shed of Lake Cochituate.

It is, consequently, most probable that the total rainfall in the Mystic water-shed, in 1871, was above 29.9 inches.

It may not be out of place to state here that in February and March of this year, I made some preliminary gaugings of

the flow of water from the Mystic lake. The measurements were taken directly at the dam, without any special apparatus and in a summary manner, although some pains were taken to correct by calculation the irregularities which have been entirely eliminated in the last experiments by the construction of a measuring weir. The average daily yield then found for the year 1871 was 17,249,000 gallons.

Respectfully submitted,

A. FTELEY,

Resident Engineer.



APPENDIX D.

REPORT

OF

MR. J. M. MERRICK

UPON THE

*USE OF THE LOWER MYSTIC POND FOR A
STORAGE BASIN.*



APPENDIX D.

OFFICE AND LABORATORY OF MERRICK & GRAY,
Analytical and Consulting Chemists,
No. 59 Broad Street, Boston, Sept. 26, 1874.

JOS. P. DAVIS, ESQ., *City Engineer, Boston*:—

DEAR SIR: I hand you herewith my report containing the results of my analyses of samples of waters and mud-deposits, from the upper and lower Mystic ponds, and the conclusion to which I have been led by these results.

The samples may be divided into five sets, viz.:—

First, 19 samples of water received, July 28th, 1874, taken the day previous at the surface of the lower Mystic pond and at each 10 feet of its depth down to 80 feet, together with various other surface samples; second, six samples of mud from the lower Mystic, collected at various depths, August 4th, 1874; third, four samples of mud from the upper Mystic, sent by Mr. Stanwood; fourth, three samples of mud collected by myself, two from the upper and one from the lower Mystic, September 7th, 1874; and fifth, several samples of surface water collected by myself the same day, viz., September 7th. I also received four samples of lower Mystic water on the 3d of September, taken the day before, and which I used to make out the series showing the amount of sulphuretted hydrogen present in the water. In the following statement I have given the number of the sample; the place and time of its collection; a brief notice of its striking properties, if any; and then the analysis in detail; the various analyses being afterwards shown in tabular form, for the purpose of comparison. In making the

analyses I have determined the total residue, the inorganic and organic or volatile constituents, and the amounts of chlorine, sulphuric acid, silica, lime and magnesia present. The alumina and oxide of iron have been determined together. The amount of sulphuretted hydrogen present was determined in separate and fresh samples, taken for the purpose.

Water No. 1. — Surface water of the lower Mystic, collected July 27, 1874.

Nearly colorless. Faint odor. Slight taste. A very little flocculent sediment.

It contained, —

Inorganic matter	47.763	grains to 1 U. S. gallon.
Organic and volatile matter	9.786	“ “ “
Total residue	57.549	“ “ “

The inorganic matter contained, —

Chlorine	17.160	“ “ “
Sulphuric acid	4.410	“ “ “
Silica	.292	“ “ “
Alumina, oxide of iron and phosphates, ...	1.168	“ “ “
Lime	4.192	“ “ “
Magnesia	—	“ “ “

Water No. 2. — Lower Mystic pond, at a depth of 10 feet, collected July 27, 1874.

Nearly colorless. Inodorous. Faint brackish taste. A little flocculent matter.

It contained, —

Inorganic matter	54.568	grains to 1 U. S. gallon.
Organic and volatile matter	8.277	“ “ “
Total residue	62.845	“ “ “

The inorganic matter contained, —

Chlorine . . .	23.014	grains to 1 U. S. gallon.
Sulphuric acid . . .	3.594	“ “ “
Silica	.058	“ “ “
Alumina, oxide of iron and phosphate . . .	.350	“ “ “
Lime	6.786	“ “ “
Magnesia	—	“ “ “

Water No. 3. — Lower Mystic, 20 feet deep, collected July 27, 1874.

Nearly colorless. Inodorous. Slight brackish taste. Considerable deposit.

It contained, —

Inorganic matter . . .	199.755	grains to 1 U. S. gallon.
Organic and volatile matter	28.452	“ “ “
Total residue . . .	228.207	“ “ “

The inorganic matter contained, —

Chlorine	104.829	“ “ “
Sulphuric acid . . .	13.756	“ “ “
Silica	.116	“ “ “
Alumina, oxide of iron and phosphate . . .	.876	“ “ “
Lime	6.058	“ “ “
Magnesia	15.209	“ “ “

Water No. 4. — From the lower Mystic, at a depth of 25 feet.

Nearly colorless. Strong saline taste. Strong odor of sulphuretted hydrogen. Blackens lead paper promptly.

It contained, —

Inorganic matter . . .	538.678	grains to 1 U. S. gallon.		
Organic and volatile matter	98.154		“	“
			“	“
Total residue . . .	636.832		“	“

The inorganic matter contained, —

Chlorine	278.928		“	“
Sulphuric acid	37.989		“	“
Silica	.292		“	“
Oxide of iron alumina and phosphates.	22.393		“	“
Lime	23.301		“	“
Magnesia	5.840		“	“

Water No. 5. — From the lower Mystic, at 30 feet depth, collected July 27, 1874.

Clear when first received. Strong saline taste. Strong smell of sulphuretted hydrogen. On standing deposited sulphur.

It contained, —

Inorganic matter . . .	651.906	grains to 1 U. S. gallon.		
Organic and volatile matter	52.699		“	“
			“	“
Total residue . . .	704.605		“	“

The inorganic matter contains, —

Chlorine	348.611		“	“
Sulphuric acid	29.293		“	“
Silica	33.010		“	“
Alumina, oxide of iron and phosphates	20.524		“	“
Lime	10.194		“	“
Magnesia			“	“

Water No. 6. — From lower Mystic, or depth of 40 feet, collected July 27, 1874.

Yellowish. Saline. Strong smell of sulphuretted hydrogen. Considerable deposit. It deposits sulphur on standing.

It contained, —

Inorganic matter . . .	880.346 grains to 1 U. S. gallon.			
Organic and volatile matter	120.120	“	“	“
	1000.466	“	“	“

The inorganic matter contains, —

Chlorine	457.607	“	“	“
Sulphuric acid . . .	52.738	“	“	“
Silica	9.340	“	“	“

Water No. 7. — Collected July 27, from the upper end of the lower Mystic pond, at a depth of 45 feet.

Clear. Yellowish. Slight deposit. Deposited sulphur on standing. Strong smell of sulphuretted hydrogen. Saline taste.

It contained, —

Inorganic matter . . .	785.232 grains to 1 U. S. gallon.			
Organic and volatile matter	21.617	“	“	“
	Total residue . . .	806.849	“	“

The inorganic matter contained, —

Chlorine	500.048	“	“	“
Sulphuric acid . . .	43.390	“	“	“
Silica	408	“	“	“
Alumina, oxide of iron and phosphates . . .	63.683	“	“	“
Lime	16.143	“	“	“
Magnesia	3.416	“	“	“

Water No. 8. — From lower Mystic, at a depth of 50 feet, collected July 27, 1874.

Clear. Yellow. Saline. Strong odor of sulphuretted hydrogen. Some flocculent deposit. Deposited sulphur on standing.

It contained, —

Inorganic matter . . .	874.544	grains to 1 U. S. gallon.			
Organic and volatile matter	80.480		“	“	“
Total residue . . .	955.024		“	“	“

The inorganic matter contained, —

Chlorine	486.216		“	“	“
Sulphuric acid . . .	24.793		“	“	“
Silica	.116		“	“	“
Alumina, oxide of iron and phosphates . . .	2.220		“	“	“
Lime	10.398		“	“	“
Magnesia	19.220		“	“	“

Water No. 9. — From lower Mystic, at a depth of 60 feet, collected July 27th, 1874.

Yellowish. Strong saline taste. Flocculent deposit. Strong smell of sulphuretted hydrogen. Deposited sulphur.

It contained, —

Inorganic matter . . .	916.802	grains to 1 U. S. gallon.			
Organic and volatile matter	100.491		“	“	“
Total residue . . .	1017.293		“	“	“

The inorganic matter contained, —

Chlorine	491.347		“	“	“
Sulphuric acid . . .	42.988		“	“	“
Silica	1.517		“	“	“
Alumina, oxide of iron and phosphates . . .	18.578		“	“	“
Lime	15.298		“	“	“
Magnesia	12.157		“	“	“

Water No. 10.—Taken from lower Mystic pond, July 27th, 1874, at a depth of 70 feet. Character that of No. 9.

It contained, —

Inorganic matter . . .	910.820	grains to 1 U. S. gallon.		
Organic and volatile matter . . .	139.648		“	“
			“	“
Total residue . . .	1050.460		“	“

The inorganic matter contained —

Chlorine . . .	441.448		“	“
Sulphuric acid . . .	79.698		“	“
Silica . . .	6.542		“	“
Alumina, oxide of iron and phosphates . . .	11.550		“	“
Lime . . .	24.687		“	“
Magnesia . . .	25.998		“	“

Water No. 11.—Water from lower Mystic pond, at a depth of 80 feet, July 27th, 1874.

Yellowish. Some flocculent deposit. Slight smell of sulphuretted hydrogen. Strong saline taste. Became dark brownish and very offensive, on standing six weeks.

It contained, —

Inorganic matter . . .	925.685	grains to 1 U. S. gallon.		
Organic and volatile matter . . .	127.950		“	“
			“	“
Total residue . . .	1053.635		“	“

The inorganic matter contained —

Chlorine . . .	464.255		“	“
Sulphuric acid . . .	46.774		“	“
Silica . . .	,876		“	“
Alumina, oxide of iron and phosphates . . .	—		“	“
Lime . . .	38.446		“	“
Magnesia . . .	—		“	“

Water No. 12. — Water collected from the lower Mystic, at a depth of 80 feet, July 27, 1874.

This water was fairly yellowish, with a little flocculent deposit. Clear on standing, with slight smell. It had no smell of sulphuretted hydrogen, and did not become offensive on standing six weeks.

It contained, —

Inorganic matter . . .	917.441	grains to 1 U. S. gallon.			
Organic and volatile matter	119.771		“	“	“
Total residue	1037.212		“	“	“

The inorganic matter contained, —

Chlorine	435.289	“	“	“
Sulphuric acid	65.983	“	“	“
Silica	6.718	“	“	“
Alumina, oxide of iron and phosphates	9.640	“	“	“
Lime	40.776	“	“	“
Magnesia	19.849	“	“	“

It is worthy of notice that while the two waters, Nos. 11 and 12, are taken at the same depth, 80 feet, and while they are about alike in the amount of total residue and chlorine, they are essentially unlike in their behavior on standing in the laboratory, — No. 11 becoming brown and turbid, and having from the first, a sensible odor of sulphuretted hydrogen; while No. 12 was, at the end of six weeks, about as it was when first collected, — nearly free from smell, clear, and having only a slight flocculent deposit.

Water No. 13. — This was a sample of water from the lower end of the lower Mystic pond, at a depth of 85 feet, collected July 27, 1874.

It was thick. Turbid. Brackish from suspended matter, with a strong smell of sulphuretted hydrogen.

It contained, —

Inorganic matter . . .	1356.440 grains to 1 U. S. gallon.			
Organic and volatile matter	210.330	“	“	“
Total residue . . .	1566.770	“	“	“
Of which the matter in suspension was . . .	419.722	“	“	“

The inorganic matter contained, —

Chlorine	388.480	“	“	“
Sulphuric acid . . .	49.667	“	“	“
Silica	large am't.			
Alumina, oxide of iron and phosphates . . .	56.763	“	“	“
Lime	36.616	“	“	“
Magnesia	3.906	“	“	“
Free sulphuretted hydrogen	140.610 cubic in. to 1 cub. foot.			
Combined “ “	24.085	“	“	“

Water No. 14. — This, according to the statement of the collectors, was essentially a duplicate of No. 13, being collected at a depth of 85 feet.

It was thick, black, full of suspended matter, with of course a strong saline taste, and a strong smell of sulphuretted hydrogen.

It contained, —

Inorganic matter . . .	881.210 grains to 1 U. S. gallon.			
Organic and volatile matter	124.155	“	“	“
Total residue . . .	1005.365	“	“	“
Of which the matter in suspension was . . .	202.093	“	“	“

The inorganic matter contained, —

Chlorine . . .	443.685	grains to 1 U. S. gallon.		
Sulphuric acid . .	59.363	“ “ “		
Silica . . .	—	“ “ “		
Alumina, oxide of iron and phosphates .	150.268	“ “ “		
Lime . . .	35.650	“ “ “		
Magnesia . . .	3.651	“ “ “		

Water No. 15. — Water collected at outlet of lower Mystic pond, a little after low tide, July 27, 1874.

Nearly colorless, or very faintly yellow. Slight odor and somewhat brackish taste. Trifling sediment.

It contained, —

Inorganic matter . .	51.414	grains to 1 U. S. gallon.		
Organic and volatile mat- ter . . .	38.561	“ “ “		
Total residue .	89.975	“ “ “		

The inorganic matter contained, —

Chlorine . . .	22.545	“ “ “		
Sulphuric acid . .	9.012	“ “ “		
Silica . . .	.292	“ “ “		
Alumina, oxide of iron and phosphates .	1.460	“ “ “		
Lime . . .	5.242	“ “ “		
Magnesia . . .	2.105	“ “ “		

Water No. 16. — Sample collected from the surface at the upper end of the lower Mystic pond, July 27, 1874.

Clear. Nearly colorless. Faint odor. Brackish taste. Slight sediment.

It contained, —

Inorganic matter . . .	44.403 grains to 1 U. S. gallon.			
Organic and volatile matter	7.011	“	“	“
Total residue . . .	51.414	“	“	“

The inorganic matter contained, —

Chlorine	9.452	“	“	“
Sulphuric acid . . .	3.258	“	“	“
Silica	1.752	“	“	“
Alumina, oxide of iron and phosphates . .	4.089	“	“	“
Lime	6.552	“	“	“
Magnesia	2.631	“	“	“

Water No. 17. — Sample of water collected from the lower Mystic pond at the outlet of Mill Brook, July 27, 1874.

Colorless. Tasteless and inodorous.

It contained, —

Inorganic matter . . .	3.505 grains to 1 U. S. gallon.			
Organic and volatile matter	2.921	“	“	“
Total residue . . .	6.426	“	“	“

The inorganic matter contained, —

Chlorine	.449	“	“	“
Silica, alumina, oxide of iron and phosphates . .	5.258	“	“	“

This sample was collected at my request, to show by comparison the character of the water flowing in from the brook. It seems a reasonably good water.

Water No. 18. — Sample from the outlet of the lower Mystic pond, a little after high tide, collected July 27, 1874.

Colorless. Brackish taste. Inodorous, or with but a faint smell.

It contained, —

Inorganic matter . . .	47.616 grains to 1 U. S. gallon.			
Organic and volatile matter	11.685	“	“	“
Total residue . . .	59.301	“	“	“

The inorganic matter contained, —

Chlorine	21.306	“	“	“
Sulphuric acid . . .	5.647	“	“	“
Silica	2.044	“	“	“
Alumina, oxide of iron and phosphates . .	3.145	“	“	“
Lime	9.465	“	“	“
Magnesia	1.444	“	“	“

Determinations of the amount of free sulphuretted hydrogen in the lower Mystic pond were made by myself upon four samples taken respectively at depths of 20, 30, 40, and 50 feet, Sept. 2, 1874, and delivered to me early the next morning; and at the pond by myself on the 7th of Sept., 1874. On this last occasion samples were taken at the surface, and at 5, 10, 15, and 70 feet. The determinations were made promptly, with a graduated solution of iodine, and gave very curious results. By reference to a diagram appended to this report, it will be seen that the amount of free sulphuretted hydrogen in the water at the lower Mystic is barely perceptible till we reach a depth of 20 feet. Then it is marked, and increases rapidly down to 50 feet, when it diminishes to 70 feet, the level of the lowest sample taken for this purpose. (“The upper limit of the sulphurous stratum,” says Prof. Horsford, in 1860, “was very precisely nineteen feet and nine inches from the surface.”) The actual amount of sulphuretted hydrogen gas in the water is as follows:—

At the surface	.		1.14	cub. inches to one cub. foot.					
" 5 feet	.	.	1.14	"	"	"	"	"	"
" 10 "	.	.	1.14	"	"	"	"	"	"
" 15 "	.	.	.76	"	"	"	"	"	"
" 20 "	.	.	11.40	"	"	"	"	"	"
" 30 "	.	.	31.95	"	"	"	"	"	"
" 40 "	.	.	65.42	"	"	"	"	"	"
" 50 "	.	.	116.21	"	"	"	"	"	"
" 70 "	.	.	95.00	"	"	"	"	"	"

The shaded diagram given in connection with this report shows graphically the relation of the sulphuretted hydrogen to the water, and it cannot fail to be observed how enormous is the increase between 20 and 50 feet in depth. It might be said that, so far as this gas is concerned, there is a *comparatively* pure stratum of water until we get to 20 feet — nineteen feet and nine inches (Horsford) — when it suddenly becomes largely charged with this offensive gas.

An attempt was made to determine the amount of sulphuretted hydrogen — if any could be found — in the water of the upper Mystic; but its presence could not be recognized either by the smell, or by the iodine test.

I give below the detailed analyses of 13 samples of mud, or deposits from the bottom of the lower and upper Mystic ponds. They may be divided into three sets, viz.: First, six samples of mud taken from the lower pond, Aug. 4, 1874, and delivered to me the next day but one, and one sample taken by myself, Sept. 7. These samples were taken from depths of 35, 40, 65, and 70 feet. In the analysis their general character was noted, and in them were determined the amount of water, of dry matter, of inorganic and volatile matter, of silica, etc. (and these results have also been calculated on the dry residue), and the cubic inches of free and combined sulphuretted hydrogen contained in a cubic foot of the mud. By free sulphuretted hydrogen gas is meant that which can be derived from the mud by simple

boiling; while by combined gas is meant that which can be eliminated by a boiling temperature aided by a strong acid. The method I have employed consists in passing the gas derived from a given amount of mud into a solution of acetate of lead rendered acid by pure acetic acid, — this precaution being very necessary in order to make sure that no carbonate is precipitated, — converting the resultant sulphide into sulphate of lead, weighing it as such, and reckoning from this the weight of sulphydric acid. It was my intention to make determinations of nitrogen in the dry residue from each of the muds, but lack of time prevented my so doing. I regret this, as I think the information that might have been obtained in regard to the nitrogenous constituents of these deposits would have been of interest and value.

Mud No. 1. — This was collected from the lower Mystic pond, at a depth of 35 feet. It was a thin mud, darkening lead paper at ordinary temperatures.

It contained, —

Water	.	.	.	.	.	90.98 per cent.
Inorganic matter	.	.	.	.	.	6.86 “ “
Organic and volatile	.	.	.	.	.	2.16 “ “
						100. “ “

The inorganic matter contained, —

Silica, oxide of iron, etc.	.	.	.	5.710 per cent.
Chlorine	.	.	.	.147 “ “
Free sulphuretted hydrogen	.	.	.	traces.
Combined “ “	.	.	.	157.07 cub. in. to 1 cub. ft.

In other words, 100 parts of the dry mud contained, —

Silica	.	.	.	.	.	63.30 per cent.
Organic and volatile matter	.	.	.	.	.	23.94 “ “
Chlorine	.	.	.	.	.	1.63 “ “
Alumina, salts and matters not determined	.	.	.	.	.	11.13 “ “
						100. “ “

Mud No. 2. — This was a sample collected from the lower Mystic pond, at a depth of 40 feet.

A thin mud, darkening lead paper faintly on application of heat.

It contained, —

Water	91.21	per cent.
Inorganic matter	6.50	“ “
Organic and volatile matter	2.29	“ “
	100.	“ “

The inorganic matter contained, —

Silica, oxide, iron, etc.	5.36	“ “
Chlorine	.228	“ “
Free sulphuretted hydrogen	traces.	
Combined “ “	224.41	cubic in. to 1 cubic foot.

In other words, 100 parts of dry mud contain —

Silica, etc.	60.97	per cent.
Organic and volatile matter	26.05	“ “
Chlorine	2.59	“ “
Alumina and undetermined matter	10.39	“ “
	100.	“ “

Mud No 3. — This was taken from the lower Mystic pond, at a depth of 40 feet.

It was a thick offensive mud, giving off perceptible hydro-sulphuric acid, at ordinary temperatures.

It contained, —

Water	86.11	per cent.
Inorganic matter	10.96	“ “
Organic and volatile matter	2.93	“ “
	100.	“ “

The inorganic matter contained, —

Silica, oxide of iron, etc.	9.31	per cent.
Chlorine	.245	“ “
Free sulphuretted hydrogen	455.06	cub. in. to 1 cub. ft.
Combined “ “	203.24	“ “ “
Total	458.30	“ “ “

In other words, 100 parts dry must contain, —

Silica, etc.	67.02	per cent.
Organic and volatile matter	21.09	“ “
Chlorine	1.74	“ “
Alumina and undetermined matter	10.15	“ “
	100.	

Mud No. 4. — This was a rather thin mud, collected from the lower Mystic pond, at a depth of 40 feet.

It gave evidence of the presence of free sulphuretted hydrogen in some quantity.

It contained, —

Water	90.02	per cent.
Inorganic matter	8.00	“ “
Organic and volatile matter	1.98	“ “
	100.	“ “

The inorganic matter contained, —

Silica, oxide of iron, etc.	7.04	“ “
Chlorine	.089	“ “
Free sulphuretted hydrogen	149.61	cub. in. to 1 cub. ft.
Combined “ “	33.21	“ “ “
Total	182.82	“ “ “

In other words, 100 parts of dry mud contain, —

Silica, etc.	70.54	per cent.
Organic and volatile matters	19.84	“ “
Chlorine	.79	“ “
Alumina and matters undetermined	8.83	“ “
	100.	“ “

Mud No. 5. — This was a sample of mud collected from the lower Mystic pond, at a depth of 65 feet.

It was a thin, not specially offensive mud, darkening lead paper very faintly at ordinary temperatures.

It contained, —

Water	92.23 per cent.
Inorganic matter	6.06 “ “
Organic and volatile matter	1.71 “ “
	100. “ “

The inorganic matter contained, —

Silica, oxide of iron, etc.	4.79 “ “
Chlorine	.317 “ “
Free sulphuretted hydrogen	traces.
Combined “ “	214.96 cub. in. to 1 cub. ft.

In other words, 100 parts of dry mud contain, —

Silica, etc.	61.64 per cent.
Organic and volatile matter	22.00 “ “
Chlorine	4.08 “ “
Alumina and matters undetermined	12.28 “ “
	100. “ “

Mud No. 6, A. — This was a thin, somewhat offensive mud, collected from the lower Mystic pond, at a depth of 70 feet. Darkening lead paper, at ordinary temperature, and like some of the others very strongly on application of heat.

It contained, —

Water	88.33 per cent.
Inorganic matter	9.39 “ “
Organic and volatile matter	2.28 “ “
	100. “ “

The inorganic matter contained, —

Silica, oxide of iron, etc.	7.81 “ “
Chlorine	.14 “ “
Free sulphuretted hydrogen	211.174 cub. in. to 1 cub. ft.
Combined “ “	167.114 “ “ “
Total	378.228 “ “ “

In other words, 100 parts of dry mud contain, —

Silica	66.92 per cent.
Organic and volatile matter	19.45 “ “
Chlorine	1.19 “ “
Alumina and matters undetermined	12.44 “ “
	100. “ “

Mud No. 6, B. — This was collected by myself on September 7th, 1874, from the middle of the lower Mystic pond, at a depth of 85 feet.

It had a perceptible odor of sulphuretted hydrogen.

It contained, —

Water	88.00 per cent.
Inorganic matter	9.47 “ “
Organic and volatile matter	2.53 “ “
	100. “ “

The inorganic matter contained, —

Silica	7.82 “ “
Alumina, with some oxide of iron, etc.	.398 “ “
Chlorine and sulphuric acid	considerable amount.
Free sulphuretted hydrogen	traces.
Combined “ “	249.08 cub. in. to 1 cub. ft.

In other words, 100 parts dry mud contain, —

Silica	65.16 per cent.
Organic and volatile matter	21.08 “ “
Alumina, oxide of iron, etc.	3.31 “ “
Salts and matters undetermined	10.45 “ “

Muds No. 7—10. — Muds Nos. 7 to 10 inclusive were collected from the upper Mystic pond, at various depths, on August 11, 1874.

No. 7. — This was from a depth of 18 feet; and was a mud of no offensive peculiarities.

It contained, —

Water	84.86	per cent.
Inorganic matter	12.71	“ “
Organic and volatile matter	2.43	“ “
	100.	“ “

The inorganic matter contained, —

Silica	12.18	“ “
Alumina, with some oxide of iron, etc.	.393	“ “
Chlorine	.009	“ “
Free sulphuretted hydrogen	traces.*	
Combined “ “	“ *	

In other words, 100 parts of dry mud contain, —

Silica	80.44	per cent.
Organic and volatile matter	16.05	“ “
Alumina, oxide of iron, etc.	2.60	“ “
Salts and matters not determined	.91	“ “
	100.	“ “

Mud No. 8. — This was collected from the upper pond, at a depth of 58 feet.

It was not offensive *per se*, but evolved sulphuretted hydrogen abundantly, when heated with a strong acid.

It contained, —

Water	86.45	per cent.
Inorganic matter	10.40	“ “
Organic and volatile matter	3.15	“ “
	100.	“ “

The inorganic matter contained, —

Silica	7.85	“ “
Alumina, with some oxide of iron, etc.	.185	“ “
Chlorine	slight amount.	
Free sulphuretted hydrogen	1.398 cub. in. to 1 cub. ft.	
Combined “ “	465.810	“ “ “
Total	467.108	“ “ “

* Not sufficient to determine quantitatively in 48 grammes of the wet mud.

In other words, 100 parts of dry mud contained, —

Silica	57.92 per cent.
Organic and volatile matter	23.24 “ “
Alumina, oxide of iron, etc.	1.36 “ “
Salts and matters not determined	17.48 “ “
	100. “ “

Mud No. 9. — This was collected from the upper Mystic pond, at a depth of 60 feet.

It smelled of sulphuretted hydrogen, but not very strongly.

It contained, —

Water	88.41 per cent.
Inorganic matter	9.58 “ “
Organic and volatile matter	2.01 “ “
	100. “ “

The inorganic matter contained, —

Silica	8.80 “ “
Alumina, with some oxide of iron, etc.	.393 “ “
Free sulphuretted hydrogen	traces.
Combined “ “	261.81 cub. in. to 1 cub. ft.

In other words, 100 parts of dry mud contain, —

Silica	76.19 per cent.
Organic and volatile matter	17.54 “ “
Alumina, oxide of iron, etc.	3.38 “ “
Salts and matters not determined	3.09 “ “
	100. “ “

Mud No. 10. — This was taken from the upper Mystic pond, at a depth of 77 feet, Aug. 11, 1874.

It was a thin mud, not offensive.

It contained, —

Water	89.53 per cent.
Inorganic matter	7.94 “ “
Organic and volatile matter	2.53 “ “
	100. “ “

The inorganic matter contained, —

Silica	7.20 “ “
Alumina, with some oxide of iron, etc.	.48 “ “
Chlorine	slight
Free sulphuretted hydrogen	traces.
Combined “ “	97.24 cub. in. to 1 cub. ft.

In other words, 100 parts of dry mud contained, —

Silica	68.76 per cent.
Organic and volatile matters	24.16 “ “
Alumina, oxide of iron, etc.	4.58 “ “
Salts and matters not determined	2.50 “ “
	100. “ “

Mud No. 11. — This and the following sample were taken under my supervision Sept. 7, 1874.

No. 11 was dredged from Bacon's bridge. It was a gravelly mud, with no offensive peculiarities.

It contained, —

Water	86.81 per cent.
Inorganic matter	10.93 “ “
Organic and volatile matter	2.26 “ “
	100. “ “

The inorganic matter contained, —

Silica	10.34 “ “
Alumina, with some oxide of iron, etc.	.405 “ “
Chlorine	traces.
Free sulphuretted hydrogen	traces.*
Combined “ “	“

* 31.50 grammes of the wet mud did not give enough gas to determine.

In other words, 100 parts of dry mud consist of, —

Silica	78.40 per cent.
Organic and volatile matter	17.14 “ “
Alumina, oxide of iron, etc.	3.07 “ “
Salts and matters not determined	1.39 “ “
	100. “ “

Mud No. 12. — This was taken from about the middle of the upper Mystic, Sept. 7, 1874, at a depth of about 80 feet. It was not offensive to the smell.

It contained, —

Water	88.54 per cent.
Inorganic matter	7.74 “ “
Organic and volatile matter	3.72 “ “
	100. “ “

The inorganic matter contained, —

Silica	7.28 “ “
Alumina, with some oxide of iron, etc.	.289 “ “
Chlorine	slight
Free sulphuretted hydrogen	traces.
Combined “ “	“

In other words, 100 parts of dry mud consist of, —

Silica	63.55 per cent.
Organic and volatile matter	32.44 “ “
Alumina, oxide of iron, etc.	2.52 “ “
Salts and matters not determined	1.49 “ “
	100. “ “

An examination of the figures expressing the results of the analyses of the various samples of mud, does not show, what might perhaps have been expected, some constant ratio between the organic matter and the sulphuretted hydrogen.

To establish such a ratio would probably require the analysis and comparison of a vast number of samples. Again, it may be said that in the lower pond at least, in collecting any specimens of mud deposit for analysis in the future, some means should be devised for getting samples of the surface of the mud, *i. e.*, where it exists in contact with the water, and where the mutual action of the two is of course more energetic. The relation of the free to the combined sulphuretted hydrogen in the different samples is not uniform. This perhaps may be explained by considering that while the action of the saline water is tolerably uniform, producing the combined sulphuretted hydrogen in the form of sulphides of the alkaline bases, yet the large amount of free sulphuretted hydrogen found in certain spots is doubtless due to large amounts of organic sewage matter containing sulphur.

While the decomposition of the sulphates in the salt water and their reduction to sulphides by the organic matters at the bottom of the pond is an active source of the impurity which renders the water of the lower Mystic offensive, yet it should be borne in mind that the inflow of the tide sweeps into the pond a mass of complex filth — decomposing organic and sewage matter — containing a considerable percentage of sulphur compounds. Much further research would be needed to explain the occurrence of exceptionally large amounts of combined sulphuretted hydrogen in the deposits dredged from certain spots at the bottom of the upper Mystic pond.

The general character of the water of the lower Mystic pond may perhaps be best understood by comparing the analytical results I have obtained with an analysis of ordinary sea-water.

The determinations of the amount of total residue, of saline matter in specimens, taken at varying depths from the surface to 80 feet, show that the average character of the water is that of ordinary sea-water diluted with two and one-half

times its bulk of fresh. This dilution, however, is not uniform. The amount of salt water increases with the depth, and very rapidly below the level of 20 feet from the surface.

Below this depth, besides the constituents of sea-water proper, we find diffused large amounts of free sulphuretted hydrogen, rendering the water offensive and totally unfit for domestic purposes. At a depth of 80 feet the amount of saline matter is about one-half that of ordinary sea-water.

Fourteen years ago the water of the lower Mystic was pronounced by high chemical authority "sufficiently pure at the surface, and for a depth of some 15 feet, to serve the purposes of domestic use." This is not the case at present, the *surface* water giving a total residue of 57.54 grains to the gallon, and one sample, taken at a depth of 10 feet, 62.84 grains, the former being twice the amount found in the surface water in 1860.

The present character of the water may also be seen at a glance by a comparison of one of the foregoing analyses with comparatively recent analyses made by myself of Cochituate water and the water of the Charles river, viz. : —

CHARLES RIVER.	COCHITUATE.	SURFACE LOWER MYSTIC, July 27, 1874,
At Newton, Feb. 19, 1874.	Drawn in Boston, May, 1874.	
Inorganic matter, 1.61* grs. to 1 U. S. gal.	2.10 grs. to 1 U. S. gal.	47.76 grs. to 1 U. S. gal.
Organic and volatile matter . . . 1.22 " " "	.78 " " "	9.78 " " "
Total . . . 2.83 " " "	2.88 " " "	57.54 " " "
Chlorine 168 " " "	.20 " " "	17.16 " " "
Sulphuric acid . . .511 " " "	.369 " " "	4.41 " " "

No determinations have been made of the ammonia salts in the lower Mystic water. Some of the deeper specimens,

* Including .23 grs. suspended matter.

however, contain these salts in marked amount, particularly nitrates.

As helping to furnish material for an answer to the questions put to me, several analyses have been made of the water of the upper Mystic pond at the surface, and at depths of 10, 20, 30, and 50 feet.

One (surface) sample was taken July 27, 1874, and sent to me with the samples from the lower pond; the others were taken under my supervision Sept. 7, 1874.

Water No. 1. — This was collected "at the dam of the upper pond" July 27, 1874. It was colorless, tasteless, and inodorous, having in suspension a few almost imperceptible flakes of organic matter.

Analysis showed it to contain, —

Inorganic matter . . .	3.797	grains to 1 U. S. gallon.		
Organic and volatile matter	1.460	"	"	"
Total residue . . .	5.257	"	"	"

The inorganic matter contained, —

Silica	.233	"	"	"
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Water No. 2. — This was collected from Bacon's bridge, Sept. 7, 1874, about one foot below the surface. It was almost colorless, tasteless, and inodorous, depositing a trifling flocculent sediment on standing.

Analysis showed it to contain, —

Inorganic matter . . .	5.258	grains to 1 U. S. gallon.		
Organic and volatile matter	2.160	"	"	"
Total residue . . .	7.418	"	"	"

The inorganic matter contained, —

Chlorine	1.27	"	"	"
Silica, alumina, oxide of iron, etc. . . .	1.16	"	"	"

Water No. 3. — This was taken at the dam, on Sept. 7, 1874, and is practically a duplicate of No. 1 of this series taken six weeks earlier.

It presented the appearance of No. 1.

Analysis showed it to contain, —

Inorganic matter . . .	3.505 grains to 1 U. S. gallon.
Organic and volatile matter	2.337 “ “ “
Total residue . . .	5.842 “ “ “

The inorganic matter contained, —

Silica, alumina, oxide of iron, etc.	1.300 “ “ “
Chlorine	1.050 “ “ “

Water No. 4. — This sample was taken from the surface of the upper Mystic, about the middle, Sept. 7, 1874. It was colorless, tasteless, and inodorous, leaving, on standing, a very slight sediment.

Analysis showed it to contain, —

Inorganic matter . . .	4.089 grains to 1 U. S. gallon.
Organic and volatile matter	2.629 “ “ “
Total residue . . .	6.718 “ “ “

The inorganic matter contained, —

Silica, alumina, oxide of iron, etc.	1.927 “ “ “
Chlorine	— “ “ “

Water No. 5. — This sample was taken Sept. 7, 1874, from the same point as No. 4, but at a depth of 10 feet. It resembled No. 4.

Analysis showed it to contain, —

Inorganic matter	3.797	grains to 1 U. S. gallon.
Organic and volatile matter	2.044	“ “ “
Total residue	5.841	“ “ “

The inorganic matter contains, —

Silica, alumina, oxide of iron, etc. . . .	1.197	“ “ “
Chlorine	1.370	“ “ “

Water No. 6. — This was taken from the same point as No. 4, but at a depth of 20 feet. It resembled No. 4.

Analysis showed it to contain, —

Inorganic matter	4.089	grains to 1 U. S. gallon.
Organic and volatile matter	2.330	“ “ “
Total residue	6.419	“ “ “

The inorganic matter contained, —

Silica, alumina, oxide of iron, etc. . . .	1.752	“ “ “
Chlorine	.974	“ “ “

Water No. 7. — This was taken from the same point as No. 4, but at a depth of 30 feet. It resembled No. 4.

Analysis showed it to contain, —

Inorganic matter	3.970	grains to 1 U. S. gallon.
Organic and volatile matter	1.859	“ “ “
Total residue	5.842	“ “ “

The inorganic matter contained, —

Silica, alumina, oxide of iron, etc. . . .	—	“ “ “
Chlorine	.807	“ “ “

Water No. 8. — This was collected at the same point as No. 4, but at a depth of 50 feet. It resembled No. 4.

Analysis showed it to contain, —

Inorganic matter	4.080	grains to 1 U. S. gallon.		
Organic and volatile matter	2.040		“	“
			“	“
Total residue	6.120		“	“

The inorganic matter contained, —

Silica, alumina, oxide of iron, etc. . . .	2.300	“	“	“
Chlorine	.870	“	“	“

An attempt was made to determine at the pond, the presence of free sulphuretted hydrogen, and its amount, if any were present, in the water of the upper Mystic; but the results obtained were negative. The sample taken at a depth of 50 feet was as free from this gas as the surface water.

The foregoing analyses go to show — to a certain extent — what the character of the water in the lower basin would be, if the salt water were pumped out and its regress prevented, and time enough had elapsed for the decomposition of the organic matter deposited at the bottom. The two ponds lie in the same primitive basin, and there is nothing to lead us to suppose that after the salt water had been removed, and the ingress of sewage matter prevented, their waters would be essentially unlike.

I append to this report a synopsis of the results obtained with the waters of the lower Mystic (A); a chart showing the ratio of increase in the amount of total residue in the same (B); a graphic representation of the rate of increase of the sulphuretted hydrogen in the same (C); a schedule of the results of analyses of the various samples of mud (D); and one showing the results obtained with the upper Mystic waters (E). I am much indebted to Mr. J. H. Osgood, B. S., for

assistance in the determinations at the pond, and in reducing to a system the enormous mass of figures obtained in the analytical work. As I have given you, in advance of this detailed statement, the general conclusions to which I have arrived, I need not repeat them here.

Very respectfully yours,

J. M. MERRICK,
Consulting Chemist.

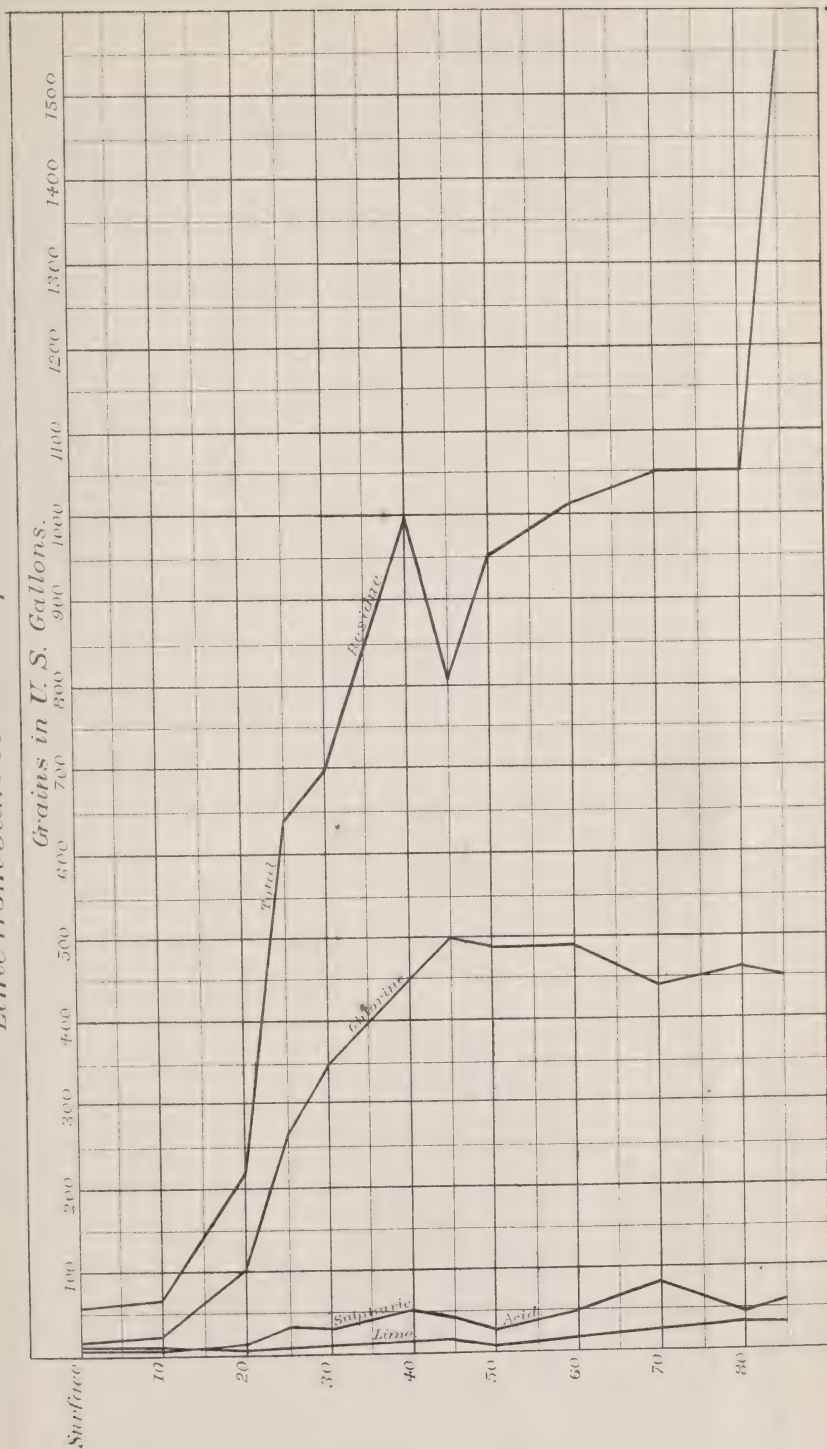


RÉSUMÉ OF ANALYSES OF LOWER MYSTIC POND WATER, JULY, 1874.

Numbers.	Date.	Depth.	Taste and Odor.	Color.	Deposit.	GRAINS TO ONE U. S. GALLON.									Free Sulphuretted Hydrogen.	Combined Sulphuretted Hydrogen.
						Inorganic.	Volatile and Organic.	Total Residue.	Chlorine.	Sulphuric Acid.	Silica.	Alumina, Oxide of Iron, and Phosphates.	Lime.	Magnesia.		
1	1874. July 27	{ Lower Mystic surface.	Slight.	Nearly colorless.	Trifling amount.	47.763	9.783	57.549	17.160	4.410	.292	1.163	4.192	.....	.....	.....
2	" "	10 feet.	Faint brackish.	" "	" flocculent.	54.588	8.277	62.845	23.014	3.594	.058	.350	6.786	.....	.....	.....
3	" "	20 "	" "	" "	Considerable.	199.755	28.452	228.207	104.829	13.756	.116	.876	6.058	15.209	.....	.....
4	" "	25 "	{ Strong saline; strong odor of sulphuretted hydrogen.	" "	.....	538.678	98.154	636.832	278.927	37.989	.292	22.393	23.301	5.840	.....	.....
5	" "	30 "	{ Strong saline; odor as 4.	" "	Deposits sulphur.	651.903	52.699	704.605	348.611	29.293	33.010	20.524	10.194	.....	.....	.....
6	" "	40 "	{ Saline; strong odor of sulphuretted hydrogen.	Yellowish.	{ Considerable; deposits sulphur.	880.396	170.120	1000.466	457.607	52.738	9.340	.....	.....	.....	.....	.....
7	" "	Upper end, 43 ft.	{ Strong saline; odor as 6.	Clear yellowish.	{ Slight; d'p'sits sulph'r on standing.	785.232	21.617	806.849	500.046	43.290	.408	63.683	16.143	3.416	.....	.....
8	" "	50 feet.	" " "	" "	{ Some deposit; deposits sulphur.	874.544	80.430	955.024	486.216	24.793	.116	2.220	10.398	19.220	.....	.....
9	" "	60 "	" " "	" "	{ Flocculent deposit; otherwise as 7 and 8.	916.832	100.491	1017.293	491.347	42.988	1.517	19.578	15.298	12.156	.....	.....
10	" "	70 "	" " "	" "	" "	910.823	139.643	1050.463	441.448	79.698	6.542	11.550	24.687	25.998	.....	.....
11	" "	80 "	" " "	Yellowish.	{ Became dark brown and very offensive on standing 6 weeks.	925.685	127.950	1053.635	464.255	46.774	.876	.....	38.446	.....	.....	.....
12	" "	80 "	{ Strong saline; faint odor, not of sulphuretted hydrogen.	"	{ No offensive smell; no change of color after standing 6 weeks.	917.441	119.771	1037.212	435.289	65.983	6.781	9.640	40.776	19.849	.....	.....
13	" "	Lower end, 83 ft.	{ Strong saline; strong smell of sulphuretted hydrogen. Blackish, and turbid with suspended matter.	.....	.....	1356.440	210.330	1566.770 Of this, 419.772 is suspended matter.	388.480	49.667	Large amount	56.673	36.116	3.906	Cubic inches to one cubic foot, 140.610	Cubic inches to one cubic foot, 24.985
14	" "	85 feet.	" " "	.....	.....	831.210	124.155	1005.365 Of this, 202.093 is suspended matter.	443.685	59.363	" "	150.288	35.650	3.651	.....	.....
15	" "	{ Outlet of pond a little after low tide. Surface.	Slightly brackish.	Faintly yellow.	Little sediment.	51.414	38.561	89.975	22.545	9.012	.292	1.460	5.242	2.105	.....	.....
16	" "	Upper end. Surface	{ Faint odor; brackish taste.	" "	" "	44.403	7.011	51.414	9.452	3.253	1.752	4.089	6.552	2.631	.....	.....
17	" "	{ Outlet of Mill Brook.	{ Tasteless and inodorous.	Colorless.	.....	3.505	2.921	6.426	.449	.....	.....	With silica. .525	.....	.....	.....	.....
18	" "	{ Outlet of pond little after high tide	Faint odor; brackish.	"	.....	47.616	11.635	59.301	21.306	5.647	2.044	3.145	9.465	1.444	.....	.....

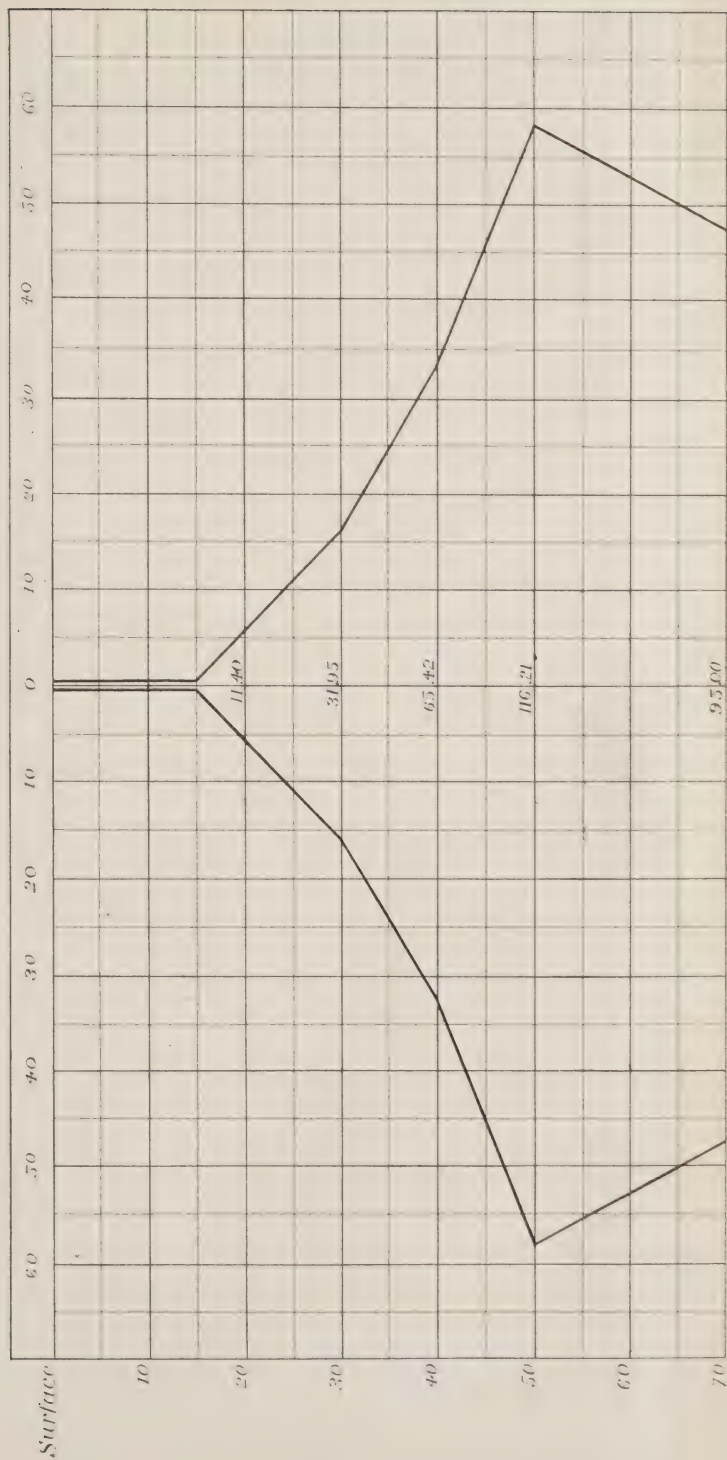
LOWER MYSTIC POND.

Profile showing the increase in total Residue, Chlorine, Sulphuric Acid and Lime from surface to a depth of 85 feet.



LOWER MYSTIC POND.

Diagram showing cubic inches of free sulphuretted hydrogen in a cubic foot of water from surface to a depth of 70 feet.



[D.]

RESUMÉ OF ANALYSES OF MUD-DEPOSITS FROM UPPER AND LOWER MYSTIC PONDS, AUGUST AND SEPTEMBER, 1874.

No.	Date.	Pond.	Depth.	Character.	Water.	Dry Residue.	DRY RESIDUE.		INORGANIC.			100 PARTS DRY MUD CONTAIN—				SULPHURETTED HYDROGEN. CUBIC INCHES TO 1 CUBIC FOOT OF MUD.			
							Inorganic.	Volatile and Organic.	Silica. Oxide of Iron.	Iron, Alumina, and Phosphates.	Chlorine.	Silica, etc.	Alumina, Iron, and Phosphates.	Organic and Volatile.	Chlorine.	Free.	Combined.	Total.	Ratio of Free to Combined.
1	August 4, 1874.	Lower Mystic.	35 feet.	Thin mud. Darkening Lead Paper at ordinary temp.	90.98	9.02	6.86	2.16	5.71		.147	63.30		23.94	1.63	Traces.	157.07	157.07	
2	" "	" "	40 feet.	Thin mud. Darkening Lead Paper at ordinary temp.	91.27	8.79	6.50	2.29	5.36		.228	60.97		26.05	2.59	"	224.41	224.41	
3	" "	" "	" "	Thick and offensive. Giving off Sulphuretted Hydrogen at ordinary temp.	86.11	13.89	10.96	2.93	9.31		.245	67.02		21.09	1.74	455.06	203.24	658.30	1 to .44
4	" "	" "	" "	Thin. Giving off Sulphuretted Hydrogen at ordinary temp.	90.02	9.98	8.00	1.98	7.04		.089	70.54		19.84	.79	149.61	33.21	182.82	1 to .22
5	" "	" "	65 feet.	Thin. Not very offensive	92.23	7.77	6.06	1.71	4.79		.317	61.64		22.00	4.08	Traces.	214.96	214.96	
6A	" "	" "	70 feet.	Thin. Somewhat offensive	88.33	11.67	9.39	2.28	7.81		.14	66.92		19.45	1.19	211.174	167.114	378.288	1 to .77
6B	September 7, 1874.	"	85 feet.	Strong odor of Sulphuretted Hydrogen	88.00	12.00	9.47	2.53	{ Silica. } { 7.82 }	.398	{ Considerable } { amount. }	65.16	3.31	21.08		Traces.	249.08	249.08	
7*	August 11, 1874.	Upper Mystic.	18 feet.	Not offensive	84.86	15.14	12.71	2.43	12.18	.393	.009	80.44	2.60	16.05		"	Traces.		
8†	" "	" "	58 feet.	Somewhat offensive	86.45	13.55	10.40	3.15	7.85	.185	Slight amount.	57.92	1.36	23.24		1.398	465.810	467.108	1 to 333
9‡	" "	" "	60 feet.	Somewhat offensive	88.41	11.59	9.58	2.01	8.80	.893	" "	76.19	3.38	17.34		Traces.	261.81	261.81	
10§	" "	" "	77 feet.	Thin and somewhat offensive	89.53	11.47	7.94	2.53	7.20	.48	" "	68.76	4.58	24.16		"	97.24	97.24	
11	September 7, 1874.	Upper Mystic, near Bacon's Bridge.	Shallow.	Gravelly. Not offensive	86.81	13.19	10.93	2.26	10.34	.405	Traces.	78.40	3.07	17.14		"	Traces.		
12	" "	Upper Mystic.	80 feet.	Not offensive	88.54	11.46	7.74	3.72	7.28	.289	Slight.	63.55	2.52	32.44		"	"		

* Northeast part of pond, 250 feet from shore.

† Taken from the northwest part of pond, 100 feet from shore southeast of E. Dwight's house.

‡ East part of pond, 150 feet from shore.

§ Centre of lower part of pond.

APPENDIX E.

REPORT

OF

MR. A. FTELEY,

UPON

CHARLES RIVER.

APPENDIX E.

OFFICE OF BOSTON WATER WORKS, ADDITIONAL SUPPLY,
SOUTH FRAMINGHAM, Sept. 26, 1874.

JOSEPH P. DAVIS, *City Engineer*:—

DEAR SIR: Having been instructed by you, early in July, to report upon the availability of Charles river as a source of water supply for Boston, I commenced the necessary surveys without delay; but the investigations have, from necessity, covered so much ground, that more time has been occupied than was anticipated, although the work has been prosecuted with energy by the engineers' corps of this department.

In the following report I have endeavored to give a condensed statement of the facts which have been ascertained, and to draw from them the proper conclusions. Approximate estimates of the cost (based upon the prices used in former estimates for other sources) of various schemes of works designed to convey the waters of the river to Chestnut-hill reservoir are also given.

Charles river rises in Hopkinton, above Milford; the main stream and its numerous tributaries (the most important of which are Chicken and Mine brooks, Mill river, Stop river, and Bogistow brook) flow through the following towns, viz., Hopkinton, Milford, Holliston, Ashland, Bellingham, Franklin, Wrentham, Walpole, Norfolk, Medfield, Medway, Sherborn, Dover, Natick, Needham, Dedham, West Roxbury, Newton, etc.

The elevation of Charles river is not sufficient, within a

reasonable distance from Boston, to allow of diverting its water by gravity into a conduit connected with Chestnut-hill reservoir. Above the point where the level of the river is proper for such a plan, *i. e.*, West Medway, the water-shed is somewhat smaller than that of Sudbury river above the site of the dams proposed for the latter stream, and a conduit from that point to Chestnut-hill reservoir would be about 24 miles in length.

It is, consequently, preferable to take the water at some point lower on the river, to secure a larger water-shed and a more economical plan of works.

The water-shed of Charles river above Rockville, in the town of Medway, covers an area of 87 square miles; above South Natick, it has an area of 150 miles; and above Newton Lower Falls, one of over 200 square miles. At the last named place, two-thirds only of the water-shed are available (unless the rights of mill-owners on Mother brook be bought out), as one-third of the river-flow is diverted at Dedham into that brook and Neponset river. Nevertheless, it may be said that at any point between Rockville and Newton Lower Falls, where it is found advisable to establish a pumping-station, the flow is large enough, with sufficient storage reservoirs, to give to the city an abundant supply of water.

In the first report on "Additional Supply of Water," Doc. No. 29, 1873, page 60, you estimate at \$3,150,000 the cost of a scheme of works to take the water at a point between Newton Upper and Lower Falls, of a capacity sufficient to convey to Chestnut-hill reservoir 50,000,000 gallons daily, and including "storage reservoirs in the river valley, engines at the lower dam, force-mains to conduct the water to a small receiving basin or chamber on the river bluff, and a conduit from the basin to Chestnut-hill reservoir." This location being practically the lowest on the river from which the water can be taken, it has been thought proper to make

an estimate of the same scheme based upon the results of the various surveys which have been made in that neighborhood since the publication of your report, with reference to the Sudbury conduit line, and during this investigation.

The cost has been found to be \$3,332,000.

To this amount should be added the cost of the additional work that it has been found advisable, since the publication of your report, to make at Chestnut-hill reservoir in connection with the Sudbury plan, making a total cost of \$3,554,000.

Cost of delivering 1,000,000 gallons, \$17 05.

Another plan, not very different from the last, has been examined with the view of reducing the pumping expenses; the pumping engines are supposed to be located at Newton Upper Falls, and connected by force-mains and by a conduit with Chestnut-hill reservoir.

Estimated cost, \$3,575,000.

Cost of delivering 1,000,000 gallons, \$16 07.

The storage room to be provided in connection with these plans can be secured, at about the same cost, by the erection of a dam, either at Newton Upper Falls, near Pettee & Co.'s mill, or at some higher point in the river valley. A few words in regard to the reservoir that would be formed by the Upper Falls dam, are in place here.

The river from that point to Charles river village, a distance of more than 10 miles along the channel, rises but little; about Dedham, there are some very extensive meadows, to flow which, unless to a considerable depth, might be objectionable. It is thought that if a reservoir were to be constructed at that point for storage purposes, its high-water mark should be established as high as the top of the dam at Charles-river village, thus giving an average depth of some 13 feet over the meadows at Dedham, and an area of nearly 3,000 acres of water surface.

To prevent the flooding of a part of Dedham it would be

necessary to construct two dykes; one across the valley of Mother brook, with the necessary overflow and sluices, and the other across the brook from Wigwam pond, which, with all the sewage of Dedham, could be diverted into Mother brook at a moderate cost. The Dedham-branch Railroad would be raised for 7,800 feet of its length; 17,200 feet of roads would be regraded, some extensive bridges raised; one factory would be destroyed, a number of dwelling-houses damaged; more than 4,000 feet of filtering gallery and pipe conduit and the pumping station belonging to the Brookline Water Works would be flooded; and the water privilege at Charles-river village would be destroyed. The total area to be taken, including some marginal land, would be about 3,300 acres, and the available contents of the basin, 7,500,000,000 gallons.

The surface of water in this reservoir would be above the level of a portion of Dedham village; just what effect the presence of the reservoir would produce upon the welfare and health of the place it is impossible to foresee; but it is evident that it would not be beneficial, and it is possible that damages might be claimed by the town in its corporate capacity. In the preceding estimates, however, no provision has been made for such damages. There are, consequently, some serious objections against the construction of this basin, but, as the question of its practicability might arise, I have thought it well to give it some study, and to delineate its principal features.

A less objectionable reservoir can be built higher up the river, as will be described in connection with another scheme; but it would be remote from the proposed location of the pumping station either at the Upper or Lower Falls, and the water, after having been purified by storage, would be conducted to the pumps, a distance of nearly 18 miles, in the natural bed of the river, where it would be

exposed to the liability of contamination, especially from vegetable matter.

You have already called attention (Doc. No. 29, 1873) to "the probability of filtration being required" if the water should be taken at Newton Lower Falls; and that in this case, or in the case of Newton Upper Falls scheme, filtration is necessary, seems to be the general view, since both Brookline and Waltham have built filtering galleries or basins through which their public supply is drawn. It is probable that this matter will be fully discussed by the commission lately appointed to investigate the comparative purity of the water from various sources; and, therefore, no extended remarks are needed here.

Two other plans have been studied, in which ample provision is made for securing a greater purity of the water and for maintaining it.

The first is as follows: To take the water at a point high enough on the river to avoid a number of the contaminating sources, and combine the advantage thus secured with that of a very large storage reservoir to aerate the water, and remove from it whatever elements of pollution it may already contain; the water to be taken directly from the basin and pumped into the conduit connected with Chestnut-hill reservoir.

The second plan includes a pumping-station at Newton Upper Falls, and extensive filter beds connected by a conduit with Chestnut-hill reservoir.

Excellent storage basins may be formed in the upper part of the water-shed of Charles river, by throwing dams across some of its tributaries, and by improving some of its natural ponds. A reservoir should be built, however, at or near the point where the water is diverted from the river bed; but the topography of the valley is such that none but very large ones can be constructed near the more desirable sites for a pumping-station; it has therefore been thought proper to dis-

regard the smaller ones that might be built high up the valley, and to consider the lower one only, which would be of more than sufficient capacity to provide all the supply needed, and in which the water would be submitted to the purifying process of storage before reaching the pumps.

A location about one mile above South Natick has been selected as the best for the site of a dam; its distance from Chestnut-hill reservoir is not excessive; a capacious reservoir can be formed above it, and the water there would be much freer from pollution than it is at Newton Upper Falls, where it will contain the additional drainage of Natick, Wellesley, Charles-river village and Dedham.

The water-shed of the river above South Natick covers an area of about 150 square miles, and would, consequently, in a dry year, with sufficient storage-room, supply a daily average of over 80,000,000 gallons. The capacity of the proposed reservoir is made much larger than necessary to secure a flow of 50,000,000 gallons daily, because it cannot be determined in this case, as is usual, by the amount of water to be consumed, but by the requirements of the grounds. A short description of the proposed reservoir is necessary to substantiate this statement.

The rise of the river from the top of the present mill dam at South Natick to the next privilege in Rockville (Medway), a distance of over 14 miles along the river, has been found to be, on an average, only three and a half feet; hence the flowage must extend to that point, at least. For the whole of that distance the river flows, as shown by the accompanying map, through a very wide valley, mostly occupied by the extensive "Medfield meadows." The idea of freeing these meadows from the accumulation of vegetable matter on their surface cannot be entertained, on account of the magnitude of such an undertaking; but to destroy the influence of that vegetable matter upon the quality of the water stored, the

depth over it should be considerable, sufficient, even when drawn down during the summer, to prevent vegetation.

For the above reasons, the high-water mark has been established 122 feet above mean high tide, *i. e.* at the height of the top of the second dam in Rockville, or 15 feet above the present dam at South Natick; this would give a fair depth of water over the meadows, it being on an average, for the whole basin, 9.08 feet.

The southern end of this reservoir will have two branches extending about equal distances on Charles river and on one of its most important tributaries, Stop river.

The valley occupied by the proposed basin is but little inhabited, the town of Medfield, on its right bank, being the only village in its immediate vicinity.

The area to be taken, including a narrow margin around the high-water line, is equal to 4,416 acres, of which —

2,057 are wet meadows or swampy woods.

1,100 are brush, woodland and pasture.

500 are arable land.

The rest being grass land, with a small proportion of cranberry meadows.

The extreme length along the river is . . .	14.35 miles.
“ “ “ in direct line is . . .	9.55 “
“ “ width is . . .	2.06 “
The total perimeter of the water area . . .	66.63 “

Three hundred and fifty-four acres will be covered with not more than five feet of water.

To construct it, 14 bridges must be raised, 5.15 miles of roads must be regraded, and 2.32 miles of track raised on the Mansfield & Framingham Railroad and on the Woonsocket division of the Boston & Erie.

The damage done to property other than the land flowed, is as follows: four water privileges are destroyed, some others are more or less affected; a few farm buildings are

partially flooded, and some farms are injured by the taking of a part of their best land.

It is said above that the dam of this reservoir has been located about a mile from South Natick; the spot selected for that purpose is very favorable for its construction; the river banks are steep and rocky, and the soundings show that hard bottom can be reached on almost the whole of the line. The extreme length is 600 feet, of which one-quarter is not over five feet in height; the overflow is 250 feet long.

The consequences of an accident to a dam holding such a large body of water would be so disastrous, that its strength and durability must be secured beyond all possibility of failure; it is designed, accordingly, to be founded on the solid rock underlying the bed of the river, and to be built entirely of substantial masonry; large sluices are provided to control the flow of the river and to regulate the water supply.

The connection between the reservoir and the pumping-engines is established by an aqueduct seven feet four inches in width, with a fall of two feet per mile. The line of the aqueduct, 16,000 feet in length, runs along the left bank of the river as far as South Natick, follows then one side of Elliot street for 2,160 feet, crosses Waban creek near the Sudbury conduit line, and stops nearly half a mile beyond it, at the proposed site of the pumping-station, near the Ridge-hill road. The pumping-engines are four in number, each of a capacity of 17,000,000 gallons per day. From the pumps the water is conveyed through force-mains into a receiving-chamber located on the line of the proposed Sudbury aqueduct, which, from the receiving-chamber to Chestnut-hill reservoir, is adapted for this scheme, without change either of grade, size or direction.

The total length of the line of works from the South-Natick dam to Chestnut-hill reservoir is 58.456 feet, or 11.07 miles.

The estimate of cost for works of a capacity to deliver a supply of 50,000,000,000 gallons is : —

Reservoir and dam at South Natick, including land damages	\$1,273,882
Aqueduct from dam to pumping-station, in- cluding land damages	456,175
Four compound engines, capacity 17,000,000 gallons	360,000
Engine-buildings and foundations, wells, etc.,	260,000
Force-mains and receiving wells	55,000
Aqueduct from pumping-station to Chestnut- hill reservoir, including land damages and work at Chestnut-hill reservoir	2,271,620
	\$4,676,677
Superintendence	230,000
	\$4,906,677

The cost of delivering 1,000,000 gallons is as follows : —

Interest upon cost of works at 6 per cent.	\$294,400
Yearly cost of pumping, lift 37 feet	69,900
Cost of delivering 18,250,000,000 gallons	\$364,300
Cost of delivering 1,000,000 gallons	\$19 96

Two pumping-engines and the corresponding force-pipes might be dispensed with at present, and the cost reduced to \$4,709,177.

An estimate has been made for a scheme of works which might be mentioned as a substitute for the last, and would be somewhat cheaper.

The plan is as follows : —

To construct a dam at Greendale avenue, above Dedham, forming from that point to Charles-river village a reservoir covering 550 acres and holding 1,000,000,000 gallons ; to convey the water from that reservoir to a pumping-station

located on the left bank of Charles river opposite Newton Upper Falls, through a conduit built along the river bank, and to pump the water therefrom across Charles river into a conduit extending from Newton Upper Falls to Chestnut-hill reservoir.

This scheme would cost \$300,000 less than the last, but is not recommended on account of its presenting some objectionable features, namely : —

The new reservoir not being large enough, the South Natick basin cannot be dispensed with ; consequently, two extensive dams must be maintained instead of one ; the lift of the pumps is increased by some 12 feet, and the river water, after having been submitted to storage in the upper reservoir, must be conveyed to the lower in the natural river channel, where it will receive the sewage of Natick (if diverted from Lake Cochituate), South Natick, a part of Grantville, Wellesley, and Charles-river village.

FILTERING SCHEME.

The only practicable way of filtering regularly so large a quantity of water as is necessary for a city of the size of Boston, is to distribute it over gravel and sand beds artificially formed, and to let it percolate through those materials ; it is freed in this manner of all the particles kept in suspension, and reaches the clear-water reservoirs connected with the filters in an improved condition. Experience has shown, however, that very large filtering surfaces must be provided, as the water, to be thoroughly purified, must be drawn very slowly through the sand and gravel.

The filtering works established in this country in connection with the water supply for cities are few in number and comparatively unimportant ; therefore, the necessary information in regard to filtration on a large scale must be had from European practice.

When the waters to be filtered contain a large proportion

of sediment, it usually becomes necessary, before distributing them over the filtering beds, to allow them to settle in large basins where the heaviest portion of the sediment is precipitated to the bottom. As the waters of Charles river are never very turbid, the large storage reservoir to be constructed at South Natick will perform the functions of a settling reservoir.

Although much information is to be had on the subject of filtration from European practice, some points are left in doubt. Where the filtering process is used on a large scale, the winters are not generally so severe as they are in Boston, and, with additional care during the cold season, the filter beds are kept in working order. In Berlin and Altona, where the climate is probably as severe as ours, the filtering basins are not injured by the ice, which is kept carefully separated from the walls, but it is impossible then to clean the beds; fortunately for the above cities, the water supplied by the streams is very clear in winter time, and as no cleaning is required for a long period, the water supply is not interrupted.

Experience alone can show whether the water of Charles river would be, in winter time, as free from impurities, and whether the sand beds would pass the necessary amount of water for a long period without being cleaned; but, if the condition of the water were generally such that the beds should be cleansed regularly during severe frosts, then the filters should be roofed in. This would involve a large expenditure, which has not been taken into account in the estimate of cost.

The dimensions adopted for the proposed filter beds are 300×150 feet, and, from comparison with other works, it is found that 16 beds are necessary to supply daily 50,000,000 gallons; 13 of them would be in operation and three disconnected for cleansing or for repairs.

As, besides the filter beds, two reservoirs are needed, one

to receive and distribute the unfiltered water, the other to collect the clear water, a very large area is required for their construction; moreover, the land must be found at a convenient elevation. Therefore the location of the whole line of works is to be governed by that of the filters.

They have been located near Newton Highlands, on a plot of land enclosed between Woodward street, the Cochituate aqueduct, and the Sudbury conduit line, the unfiltered-water reservoir only being placed on the other side of Woodward street.

The water is taken from the river between the two water privileges in Newton Upper Falls, and a dam 10 feet high is thrown across the river where its bed is narrow and rocky, thus forming a small reservoir; the water privilege situated above would consequently be deprived of a large part of its fall.

The pumping-engines, connected with this reservoir by a short brick conduit, are located some distance north of Boylston street, near the bank of the river, and send the water through force-mains and another brick conduit into the unfiltered-water reservoir; from this it is distributed over the sand beds.

The filtering basins are enclosed by vertical walls of rubble masonry, with concrete and brick bottoms; they are symmetrically disposed on each side of a central line, and are connected by the necessary gates and channels with the filtered-water reservoir. An aqueduct starts from the latter, and, after a short distance, meets the line of the Sudbury conduit, which it follows to Chestnut-hill reservoir, a distance of nearly 12,500 feet.

The total length of the line, exclusive of the filters, is 17,600 feet (3.31 square miles).

In addition to the above, a sewer has been devised to divert into the river, below the proposed dam, the drainage of Newton Upper Falls and of Newton Centre.

The estimate of cost for works of a daily capacity of 50,000,000 gallons is as follows : —

Dam, gate-house and conduit to the pumps, including damage to water privilege . . .	\$133,000
Four 17,000,000 gallons pumping-engines, lift 78 feet	520,000
	\$653,000
Foundations and buildings	\$300,000
Force-mains and receiving well	115,000
Brick conduits, including sewer at Newton Upper Falls, work at Chestnut-hill reservoir and land damages	1,088,193
Superintendence	270,000
Filters and reservoirs, including land damages	1,666,164
Storage reservoir above South Natick	1,273,882
	\$5,366,239

The cost of delivering 1,000,000 gallons is as follows : —

Interest upon cost of work at six per cent . . .	\$321,974
Yearly cost of pumping and filtering	139,660
Cost of delivering 18,250,000,000 gallons . . .	\$461,634
Cost of delivering 1,000,000 gallons	\$25 30

The cost of works proportioned for immediate use, with two pumps only and four filter beds, is \$4,109,409.

It has been said that no subsiding reservoirs can be conveniently constructed in direct connection with the filters ; one basin, of a capacity of 100,000,000 gallons, can be built, however, below Newton Upper Falls in the valley of the river, and the water pumped directly from it ; but, owing to its size, and to the fact that the stream of the river would pass through it, it is questionable whether the settling process could take place successfully ; it has been thought that

the doubtful advantages to be derived from it would not be an adequate compensation for the following objectionable features of this plan, viz. : The line of the works is longer ; the sewer intercepting the drainage of Newton Upper Falls and Newton Centre must be lengthened ; the dam to be constructed is much more expensive ; the lift of the pumps is increased by 10 feet, and the difference of cost is about \$250,000 in favor of the plan described above.

Respectfully submitted,

A. FTELEY,
Resident Engineer.

City Document.— No. 86.

CITY OF BOSTON.



REPORT OF CITY ENGINEER

ON CHANGING THE LOCATIONS OF THE

Eastern and Boston and Albany Railroads,

IN EAST BOSTON.

CITY OF BOSTON.

[CHAP. 53.]

RESOLVE in relation to the Crossing by the Eastern, and Boston & Albany Railroads, of certain streets at grade in East Boston.

Resolved, That the petition of Samuel C. Cobb, Mayor of the City of Boston, for a change in the location of the Eastern Railroad and the Boston & Albany Railroad, in East Boston, so as to prevent the crossing at grade of Marion street, Prescott street, Porter street, Maverick street, Sumner street and Webster street by the tracks of said corporations, be referred to the Board of Railroad Commissioners, with instructions to consider and report, as soon as practicable, and not later than the first week of the session of the next General Court, what change, if any, should be made in the locations of said railroads in the City of Boston, or what change, if any, should be made in any highway in said city, or what measures of any kind whatever can or ought to be taken for the purpose of obviating the present crossing of the said streets in said city at grade by the tracks of the said Railroad Corporations; and also a plan for the equitable apportionment between any Railroad Corporations interested, the City of Boston, and any persons or corporations interested, of the expense of any change of grade or location either of the railroads or of any highway, or the carrying out of any measures which in the judgment of the Board may be required by considerations of public safety and convenience. [Approved May 22, 1874.]

CITY OF BOSTON.

OFFICE OF CITY ENGINEER, CITY HALL.

BOSTON, Sept. 28, 1874.

ALDERMAN S. B. STEBBINS, *Chairman of Joint Standing Committee on Legislative Matters:—*

SIR: With this I hand you a report by Mr. J. B. Cunningham, who has investigated the feasibility and estimated the cost of so changing the location of the Eastern and Boston & Albany Railroads in East Boston, as to obviate the necessity of building expensive overhead bridges to carry various important streets of the city across the railroad lines.

There is little to be added to the views presented by Mr. Cunningham. I have followed him in his work and agree with him generally in his conclusions. I would call attention, however, to the fact that in the estimate of land to be taken on the new location, more than double the area (1,150,000 square feet) is provided for business purposes for the Eastern road than it now has on its present location (492,000 square feet. This area can very properly be reduced by cutting off all that portion lying to the west of Jeffries street extended, or by about 240,000 square feet. The value of this portion, at the price of the estimate, and the cost of filling it, would be about \$200,000, which should be deducted from the total of the estimate, leaving the excess of the cost of the new location, above the value of the property abandoned on the old, about \$225,000.

The cost of building overhead bridges on Webster, Sum-

ner and Maverick streets, renders that method of obviating the difficulty which now exists, impracticable.

To build bridges with approaches of a grade as steep as three and a half feet in a hundred even, will require a strip of land, on each side of the road, some five or six hundred feet wide, with the buildings on it, to be raised. This will leave the railroad in a deep cut with access to the streets at the ends only.

The immediate necessities of the city may be met by the building of only one bridge, but, as the city grows, others will be required. The building of a single bridge, even, will be very costly, and extensive changes in street grades, parallel with as well as at right angles to the railroad, will be required.

The railroad companies have spread their tracks so that they occupy a considerable length of the streets that are crossed, requiring bridges from 80 to 125 feet long to span them. As they have a very unusual width of road-bed, it would seem that the companies should be made to bear a part of the cost of bridging in case bridges are built, or that they should be made to bear a corresponding part of the cost of relocating the tracks, in case relocation is determined upon.

The proper location of a steam railroad through a city is along the water front, where it is out of the way of street travel and has direct access to the shipping. If East Boston shall continue to grow as it has been growing for the past 10 or 15 years, its eastern shore will be improved (I am informed that various projects for this purpose have already been discussed); and, as it lies near to one of the deepest and best channels in the harbor, will be made accessible for deep draft vessels. When such improvement is made, the railroads will naturally seek a direct connection with the wharves; therefore it appears to be wise action to locate them now so that this connection may be easily made, when by so doing an existing obstacle to the growth of the city may be removed.

The prices applied in Mr. Cunningham's estimate to the

lands taken and abandoned have been fixed by him after consultation with parties who are well acquainted with the value of lands in that section of the city.

Respectfully yours,

JOS. P. DAVIS,

City Engineer.

BOSTON, MASS., September 21, 1874.

JOSEPH P. DAVIS, ESQ., *City Engineer.*

DEAR SIR: In accordance with instructions received from you, I have carefully examined the subject referred to in Chapter 54 of the Resolves of 1874 relating to changing the location of the Eastern and Boston & Albany Railroads in East Boston, and other matters, and herewith respectfully submit the following report and accompanying plan.

The object sought for by the petition of Mayor Cobb is to obviate, by practicable means, the difficulties occasioned by crossing at grade seven streets, over which there is much travel, and many others of minor importance, which in the daily operations of the railroads on their present location are seriously and even dangerously obstructed. The location of the railroads now divides the ward longitudinally in a straight line extending from the Harbor Line to Chelsea creek, as nearly as may be, through its geographical centre.

The interests affected are those of the Eastern and Boston & Albany Railroads, the East Boston Company, and the City of Boston.

So far as the railroads are concerned they are satisfied with their present status, but are not unwilling to accept any change which may not operate unfavorably to their business interests, present or prospective. The East Boston Company was the original owner of the whole area under

consideration, and is interested in the development of its lands, the larger portion of which consists of marshes and flats. This company conveyed to the Eastern Railroad Company all that area now occupied by the latter (and owned by it in fee) west of the easterly line of Decatur street, and also granted a right of way 50 feet wide, easterly from said street, extending to the channel of Chelsea creek, for railroad purposes. Except the facilities common to both roads, viz., that of unobstructed transit through the whole length of East Boston, the Boston & Albany Company is not materially affected by the change. Its premises are to be reached by a better approach, but from an opposite point to the present one. The position of the City of Boston in the matter is that of a great commercial city guarding her business interests, and at the same time securing to her citizens all the convenience and security possible.

Two methods of obviating the present difficulties and obstruction to travel are suggested by the petition: first, an entire relocation of the Eastern and Grand Junction Railroads, the removal of their present tracks altogether; and, second, that of taking the highway travel over the present tracks, by bridgings. As the latter method appears entirely impracticable, I have considered only the former at length.

The change of location will necessitate the abandonment by the Eastern Railroad Company of all its workshops, storage and freight-houses, wharves and docks, now covering some 12 acres of area, and the purchasing of lands equal or larger in surface, and the construction of other buildings for business. For this purpose no equal area of water frontage affords the same facilities as that of Jeffries Point, so called. This, as shown on the plan, extends from the easterly line of Simpson's Dock property, to the line of Maverick street extended, including a strip off Jeffries and Marginal streets, at their junction, for track room, and extending to the commissioner's line on the south.

On the north side all the area bounded by Maverick street on the south, and a line running parallel thereto and 500 feet distant therefrom, 1,200 feet long.

In view of the many contemplated improvements which are sure to be made at an early day, the immediate neighborhood of this point will be the site for large manufacturing establishments, whose operations will contribute largely to the income of the railroads, and the development of the surrounding lands. The larger portion of the area upon which relocation is to be made is marshes and flats, requiring to be filled to at least grade 16 (city), to be available for occupation. The ebb-tide now leaves the flats some three feet out at low water, and the height of solid filling would be about 14 feet average. Careful soundings show a substratum of hard blue clay underlying the whole basin and cove. The materials for filling, except about two feet of top dressing, must be dredged from the adjacent flats. The construction of piers and docks would soon follow the solid filling around Jeffries Point, and the dredging of Bird's Island flats, for a short distance, will open to shipping the best channel water of Boston Harbor. The important results of the change will be unquestionably these: Property of every description east of Bremen and Lewis streets will increase in value largely. That now occupied, from 20 to 30 per cent., and that unoccupied, from 100 to 200 per cent. All impediments to the development and occupation of lands vacated will be removed, and an impetus given to manufactures and transportation companies seeking suitable tide-water facilities.

The line of change which appears most feasible is shown on the accompanying plan, and described as follows, viz.: Beginning at the southerly abutment of the bridge of the Grand Junction branch of the Boston & Albany Railroad over Chelsea creek and running in continuation of the centre line of said bridge under Pope, Chaucer, Saratoga and Bennington streets, to a point in the flats 840 feet distant from the

present shore-line near Milton street. Thence by a curve to the right, of 1,447 feet radius, to a point on East Wood Island, 280 feet from the present shore-line thereof. Thence tangent to said curve over flats of the basin to an angle in the sea-wall, in the easterly line of Maverick street, and 554 feet distant from the northerly line of Jeffries street. Thence by curve to the right 1,447 feet radius, and over a part of Jeffries and Marginal streets, to the centre line between the two outside straight tracks of the Boston & Albany Railroad Company, which line shall be tangent to last curve; whole distance being 10,555 feet.

Grade 16 (city) at all points of line. The right of way taken is $82\frac{1}{2}$ feet. The road-way 54 feet wide, with four tracks seven feet apart, the whole distance from Chelsea creek to Maverick street. The bridging over the flats to be a pile structure.

From the following statement of facts relating to the grade heights, and the horizontal distances between the accepted streets of the city, in the immediate vicinity of the railroad tracks under consideration, the impracticability of the alternative of bridging will readily appear.

The present grade height of the railroad tracks over Maverick, Sumner and Webster streets is 15 feet above city base. The grade height of Lewis street which crosses the head of Webster street is 16, or one foot higher. By statute law, all overhead bridges must be 18 feet in the clear above top of rail. The top of the floor beams or pavement of the bridge will be at least two feet higher, or 20 feet from top of rail, making the grade height of top of bridge 35 feet above city base.

To illustrate the effect of this high grade upon the surrounding territory let us take for example Webster street.

The distance on Webster street from the railroad tracks to Lewis street is 164 feet; the height of the bridge would be 19 feet above it. Now, assuming a grade of 3.5 feet in

100 for the approaches, it would be required to raise Lewis street 13.4 feet, and to grade it from the ferry on one side, and Maverick square on the other; as also about the same grading would be required on Orleans street, from Everett to Marginal, this new construction would wall out the area still remaining at grade and render it useless for business purposes. In conclusion, the proper bridging of the railroad tracks will necessitate the raising of the grade of all the surrounding property within 500 feet, or where the slope of $3\frac{1}{2}$ feet in 100 would meet the natural surface.

The cost of bridges and abutments can be estimated, but the grade damages consequent upon their construction cannot be accurately ascertained.

In estimating cost of change, I have given a cash valuation of lands vacated on the existing location, as also of those to be occupied on the relocation.

I am most respectfully,

Your obedient servant,

JAMES B. CUNNINGHAM.

STATEMENT showing the several expenses involved in the proposed change of location of the Eastern and Boston & Albany Railroads in East Boston.

Right of Way.

From the Shore line of Chelsea	
Creek to the shore line of the	
Cove at Milton st., five rods	
wide, $82\frac{1}{2}$ feet, 2,000 feet =	
165,000 sq. ft., @ 30c. . . .	\$49,500 00
Upland on Wood Island, 57,750	
sq. feet, @ 10c.	5,775 00
Amount carried forward,	\$55,275 00

<i>Amount brought forward,</i>	\$55,275 00	
Flats over Basin and Cove,		
4,743,450 sq. feet, @ 5c.	23,717 00	
		\$78,992 00

Construction.

121,500 cubic yds. earth exca-		
vations, @ 50c.	\$60,750 00	
298,180 sq. feet pile bridging,		
@ 70c.	208,026 00	
9,640 cubic yards masonry, @		
\$11.00.	106,040 00	
7,230 cubic yards masonry, @		
\$5.25	37,958 00	
		412,774 00

Street Bridges overhead.

24,750 sq. ft., @ \$3.00 (not in-		
cluding masonry), over Pope,		
Chaucer, Saratoga and Ben-		
nington streets,		74,250 00

Superstructure.

840 tons rails, @ \$70	\$58,800 00	
Frogs, crossings, switch stands	6,230 00	
Track laying	1,250 00	
Splice joints and spikes	1,484 00	
		67,764 00

Business Area.

550,000 sq. ft. improved wharf		
property, @ 70c.	385,000 00	
600,000 sq. ft. wharf property		
(26½ acres), @ 35c.	211,000 00	
		596,000 00

<i>Amount carried forward,</i>	\$1,229,780 00
--------------------------------	----------------

<i>Amount brought forward,</i>	\$1,229,780 00
Mud filling to grade fourteen, 900,000 cubic yds., @ 40c.	\$360,000 00
Top dressing to grade sixteen, 200,000 cubic yds., @ 50c.	100,000 00
	460,000 00
Cost	\$1,689,780 00

As an offset, there is :—

Eastern Railroad Property.

1,960,000 sq. feet unimproved property, @ 40c.	\$784,000 00
492,000 sq. ft. improved prop- erty, @ \$ 1.00	492,000 00
	1,276,000 00
	\$413,780 00

City Document. — No. 87.

CITY OF BOSTON.



REQUEST

FOR AN

ADDITIONAL APPROPRIATION

FOR

ARMORIES.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Oct. 26, 1874.

The Joint Standing Committee on Armories and Military Affairs beg leave to represent that an additional appropriation of five thousand dollars will be required to meet the necessary expenses of the department during the remainder of the present financial year.

The expenditures to October 1st (including the October draft) amounted to \$13,766 01

The items are as follows : —

Rents of armories	\$8,975 41
Allowances for rents of head-quarters . .	1,537 50
Repairs of armories	2,613 85
Gas	375 00
Water-rates armory building, East Boston .	24 50
Committee : — Refreshments . .	\$203 75
Carriage hire . .	36 00
	239 75

The bills now in the Auditor's office, on account of repairs, etc., amount to \$162.62. Orders have been passed by the City Council, authorizing expenditures for repairing and furnishing armories to the amount of \$2,241.53. By adding this amount, and the amount of the above-named bills, to the payments made up to October 1st, it gives a total of \$16,170.16. Deducting this from the appropriation made for the financial year (\$25,000), and a balance of \$8,829.84 is left.

On the basis of the present allowances for rents of armories and head-quarters there will be required, on that account, for the remainder of the year, the

sum of	\$10,680 00
For gas	375 00
Total	<u>\$11,055 00</u>

To meet this there is the balance of the appropriation (after paying all expenditures authorized by the City Council) amounting to

8,829 84

Making the amount to be provided for

\$2,225 16

It is estimated that an additional sum of \$2,774.84 will be required to cover further allowances for rent, and the necessary repairs, etc., during the remaining six months of the financial year.

It should be understood that the appropriation made for the present year was the same as the appropriation for the year previous ; and that, by the annexation of West Roxbury and Charlestown, the city has been obliged to provide seven additional armories — five for infantry, one for cavalry and one for head-quarters.

The expenditures, in proportion to the number of armories furnished, will not be so large this year as they were for the year ending on the first day of May last.

Respectfully submitted,

For the committee,

ROLAND WORTHINGTON,

Chairman.

City Document.—No. 88.

CITY OF BOSTON.



EXECUTIVE COMMUNICATION

RESPECTING

ADDITIONAL WATER SUPPLY.

CITY OF BOSTON,
IN COMMON COUNCIL, Oct. 22, 1874.

Read, laid on the table, and ordered to be printed.

Attest :

W. P. GREGG,
Clerk of the Com. Council.

CITY OF BOSTON.

EXECUTIVE DEPARTMENT, CITY HALL,
BOSTON, October 22, 1874.

TO THE HONORABLE THE CITY COUNCIL: —

GENTLEMEN: It becomes my imperative duty to call your attention to the necessity of immediate action upon the question of continuing the work now under contract for the construction of a portion of the conduit between Farm pond and the Chestnut-hill reservoir. In order that the question as now presented may be clearly understood, I beg to state, as briefly as possible, the action already taken upon the subject by the City Council and the Water Board.

By chapter 177 of the Acts of 1872, the City of Boston was authorized, by and through the agency of the Cochituate Water Board, to take, hold and convey, to, into, and through this city, all the waters of Sudbury river and Farm pond, and also to take any water-rights in or upon the river and pond, or connected therewith.

Upon the recommendation of the Joint Standing Committee of the City Council on Water, the following order was passed on the 11th of April, 1873, viz. : —

" *Ordered*, That the Treasurer be authorized to borrow, under the direction of the Committee on Finance, the sum of \$500,000, to be expended under the direction of the Cochituate Water Board in furnishing an additional supply of pure water from the Sudbury river."

Soon after, the Water Board made a contract involving an expenditure of about \$340,000, for building a conduit from

Chestnut-hill reservoir to Newton Centre, — being a part of the independent conduit from Chestnut-hill reservoir to Farm pond, the plan by which the supply from Sudbury river was to be brought into the city. In beginning work under the contract, the verbal consent of the owners of lands entered upon was obtained, it being the opinion of the Water Board that a settlement more favorable to the interests of the city could be made after the work was completed, and the actual damage shown, than before anything had been done. Early in the fall of 1873 it became necessary to seize lands in the proposed storage basins, and the City Solicitor was called upon to prepare the necessary papers. He found that, although the Water Board had been authorized by the order of April 11th to carry on the work in which they were then engaged, they had received no direct authority to act as the agents of the city in taking lands.

On the 20th of October the Chairman of the Committee on Water offered an order in the Board of Aldermen, giving the Water Board formal authority to take and hold, by purchase or otherwise, the necessary lands and water-rights to procure a permanent supply of water from Sudbury river and Farm pond. The order was passed and sent to the Common Council, where, after some discussion, it was referred to the present City Council. The report of your Committee on Water, submitted on the 22d of January last, recommending the passage of the same order, is now before you. Meantime the work under the contract has been continued. When it appeared that the Water Board had no authority to take lands, the owners of the estates which had been entered upon threatened to stop the work by injunction, and it became necessary to settle with them, or forfeit all that had been done. The work under the contract has now progressed to a point where other estates, whose owners have not settled with the city, are to be entered upon; and I am informed by the Water Board that, unless the lands are

taken by competent authority, an injunction will be obtained to prevent the contractors from proceeding. The work cannot be stopped without making the city liable in damages to the contractors. Under these circumstances, the Water Board decline to take the responsibility, either of continuing the work, and being made personally liable, or of discontinuing it, and making the city liable. The City Council can meet the question in one of two ways: First, By passing the order giving the Water Board authority to take all the lands and water-rights necessary to procure a permanent additional supply from Sudbury river. Second, By directing the Water Board to discontinue work on the conduit and to settle with the contractors. I respectfully request that you will give the matter your early and earnest attention, to the end that the public interests may not suffer from unnecessary delay.

SAMUEL C. COBB,

Mayor.

City Document. — No. 89.

CITY OF BOSTON.



COMMUNICATION
ON
SUPPLY OF WATER
IN ADVANCE OF
SEWERAGE
IN
CERTAIN PORTIONS OF THE CITY.

CITY OF BOSTON.

TO THE BOARD OF ALDERMEN : —

The Committee on Sewers desire to call the attention of the Board to the great distress and danger to health in certain parts of the city, caused by furnishing a copious supply of Cochituate water, before any provision can be made for its removal by sewerage.

The soil around our suburban dwellings, which will easily absorb the sewage of the household when the water used is pumped from wells, is rapidly saturated and overflowed when the supply comes from the water-pipes ; the wells are spoiled, and the neighborhood becomes unhealthy.

The larger part of the work of the Sewer Department has been and will continue to be in the outlying wards, following the laying of water-pipes at a greater or less interval ; but it is impossible to furnish sewerage as fast as water supply, because the drainage of a small area in a high situation may require a long and expensive sewer ; and this, under our law of assessment, is paid for by an almost insupportable tax upon all the estates along its line which really have no need for it. From some petitions on the files of the department it would appear that greater discomfort has arisen from a supply of water without means of drainage, than would have been encountered by keeping the original supply from wells.

But, more than this, owing to the extended area and peculiar topography of our city, there are localities to which it will be physically impossible to extend sewers for many years ; and by furnishing indiscriminately a supply of Cochit-

uate, a permanent evil will result from a temporary convenience. To this contingency we deem it proper, through you, to call the attention of the Water Board, the Board of Health, and the citizens of the suburban wards.

JAMES POWER,
ALANSON BIGELOW,
THOS. B. HARRIS,
Committee on Sewers.

IN BOARD OF ALDERMEN, Oct. 19, 1874.

Ordered to be printed and referred to the Cochituate Water Board. Sent down for concurrence.

JOHN T. CLARK, *Chairman.*

IN COMMON COUNCIL, Oct. 22, 1874.

Concurred.

E. O. SHEPARD, *President.*

City Document. — No. 90.

CITY OF BOSTON.



REPORT AND ORDERS

FOR

PART PAYMENT OF CONTRACTORS

FOR

BUILDING CERTAIN STREETS

ON THE

BACK BAY.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, December 14, 1874.

The Joint Standing Committee on Streets, to whom was referred the petition of the Boston Water Power Company, assignees of N. C. Munson, for the payment of an instalment under the contract with the city for the construction of certain streets on the Back Bay, having considered the subject, would respectfully recommend the passage of the accompanying orders.

For the committee,

JOHN T. CLARK,

Chairman.

Whereas, The City Council, by an order passed the 27th day of November, A.D. 1871, agreed to pay Norman C. Munson the sum of \$300,000, in case he would construct, or cause to be constructed, within two years, and graded to an elevation of not less than eighteen feet above mean low water, the following-named streets and avenues, namely: Commonwealth avenue, 200 feet wide, from Exeter street to its junction with the proposed extension of West Chester Park street; Huntington avenue, 100 feet wide, from Boylston street to Camden street, and West Chester Park street from the Boston & Providence Railroad to Beacon street; and would convey, or cause to be conveyed, said avenues and street to the City of Boston, and would release, or procure to be released, to the city, all claims by all persons affected thereby for damages on account of the grading of said avenues and street, and would also do certain other things named in the said order; and

Whereas, The said Norman C. Munson accepted said proposition of the City Council, and executed the proper papers obligating himself to carry the same, or cause the same to be carried, into effect; and

Whereas, The said Norman C. Munson has assigned to the Boston Water Power Company all his right to receive payment under the said contract with the City of Boston; and

Whereas, The said Water Power Company has partly completed the work to be performed under the said contract, and has applied to the city for the payment of a portion of the full amount which the city agreed to pay upon the completion of the work; now, therefore, it is hereby

Ordered, That the Joint Standing Committee of the City Council on Laying-out and Widening Streets be authorized to pay to the Boston Water Power Company the sum of two hundred thousand dollars whenever the said Company conveys, or causes to be conveyed, to the city, in a form satisfactory to the City Solicitor, the fee of not less than two-thirds of the whole territory underlying the said street and avenues within the limits named in the said contract, and fills the portion of said street and avenues so conveyed to the grade required by said contract, and in all other respects complies with the requirements of said contract so far as relates to the portions so conveyed; but such payment shall not be construed as releasing the said Munson, or the said Water Power Company, from any of the stipulations or provisions in the said contract.

Ordered, That the Committee on Finance be requested to report an order providing the means to enable the Joint Standing Committee of the City Council on Laying-out and Widening Streets, to pay the Boston Water Power Company the sum of \$200,000, being an instalment of the amount to be paid under the contract for filling and conveying to the city certain streets on the Back Bay.

APPENDIX.

COPY OF THE ORDER PASSED BY THE CITY COUNCIL NOV. 27, 1871.

Ordered, That in case N. C. Munson, within two years, will construct, or cause to be constructed, and graded to an elevation of not less than eighteen feet above mean low water, the following street and avenues, viz.: Commonwealth avenue, two hundred feet wide, from its present termination to its junction with the proposed extension of West Chester Park street; Huntington avenue one hundred feet wide, from Boylston street to Camden street; and West Chester Park street from the Boston & Providence Railroad to Beacon street, according to a plan of "lands on the Back Bay" numbered one, made under the direction of Jonathan Preston and others, Commissioners, dated Dec. 6, 1864, and shall convey, or cause to be conveyed, said avenues and street to the City of Boston, and shall release, and procure to be released, to the city all claims by all persons affected thereby for damages on account of the grading of said avenues and street to said grade, or to any higher grade which may be found necessary or expedient to carry the same over the said railroad or over the Boston & Albany Railroad by means of bridges, including all land damages as well as all damages for the sloping of the earth upon abutting lands which may be necessary or expedient in maintaining said avenues and street at grade eighteen, or any increased grade, as afore-

said, or for so increasing the grade in order to cross said railroads ; and also securing to the city the right so to have the earth slope as aforesaid without any retaining wall or bulkhead to support the same so long as may be necessary in order to maintain said avenues and street at their full width ; then the city will pay to said Munson, or his assignees, the sum of \$300,000, and will proceed forthwith to construct suitable iron bridges over said railroads, for public travel, and will keep said avenues and street in safe condition for public travel from the time said grading shall have been completed, and said deeds and releases given, until they are accepted or laid out as public streets, and the city will assume and pay all assessments for betterments on account of such laying out or acceptance of said street and avenues within the limits above named.

Provided, that in case the city authorities shall, within two years, construct a main sewer from Huntington avenue to Charles river, on the line of Fairfield street, or on any line between Dartmouth and Gloucester streets, the said Munson, or his assignees, shall reimburse the city to the extent of three-fourths of the cost thereof, after the assessments shall have been made therefor of so much of said three-fourths as is properly assessable ; and, *also provided*, that said Munson shall, in writing filed with the City Clerk, accept this proposition within thirty days from the passage hereof, and execute proper papers satisfactory to the Mayor and City Solicitor, obligating himself to carry the same, or to cause the same to be carried into effect.

City Document. — No. 91.

CITY OF BOSTON.



REPORT

ON

AMENDMENTS TO ORDINANCE

ESTABLISHING

WATER RATES.

CITY OF BOSTON.

IN COMMON COUNCIL, October 26, 1874.

The Joint Standing Committee on Ordinances, to whom was referred the communication from the Cochituate Water Board, covering a report from the Water Registrar, recommending certain amendments in the ordinance establishing water-rates, so as to prevent the unnecessary waste and improper use of water, having considered the subject, would respectfully recommend the passage of the accompanying ordinance.

For the Committee,
BENJAMIN DEAN.

CITY OF BOSTON.

In the Year One Thousand Eight Hundred and Seventy-four.

AN ORDINANCE

To amend an ordinance providing for the care and management of the Boston Water Works.

Be it ordained by the Aldermen and Common Council of the City of Boston, in City Council assembled, as follows:—

SECTION 1. The ordinance providing for the care and management of the Boston Water Works is hereby amended by adding to section twenty-four, the following:—

"*Seven.* — All distributing pipes and water fixtures introduced into the premises of any water-taker shall be subject to approval by the Cochituate Water Board, or their duly appointed agents; and no change affecting the flow of the water shall be made in the service pipes or water fixtures already introduced, unless approved by the said Water Board, or their duly appointed agents.

"Nothing in this section contained shall be construed to prevent the City Council from altering the foregoing regulations from time to time in its discretion."

Also, by striking out all after the twelfth line in section twenty-seven, and inserting in place thereof the following:—

"In addition to the foregoing rates there shall be charged to each dwelling-house with one family from one dollar to ten dollars for each water-closet and each bath-tub in use, according to the amount of water used; and for each family, more than one, the annual charge shall be, for each, two dollars additional."

Also, by striking out all between the word "tenement" in the twelfth line, and the word "each" in the seventeenth line of section twenty-eight, and inserting in place thereof the following: —

"In addition to the foregoing rate, there shall be charged to each tenement from one to ten dollars for each water-closet and each-bath tub in use, according to the amount of water used."

Also, by striking out all after the word "annually," in the ninth line of the twenty-ninth section, and inserting in place thereof the following: "And in addition to these rates there shall be charged for each water-closet in use within the office or tenement from one to ten dollars, according to the amount of water used; and when the water-closet is located so as to be used in common, the charge for each office or tenement shall be from one to ten dollars, according to the amount of water used."

Also, by striking out in the fifth line of section thirty-three the words, "five dollars, and for corner lots ten dollars," and inserting in place thereof the words, "from five dollars to fifty dollars, according to the amount of water used."

City Document. — No. 92.

CITY OF BOSTON.



MAJORITY REPORT

OF THE

DIRECTORS OF PUBLIC INSTITUTIONS

ON THE EXPEDIENCY OF LOCATING THE

HOME FOR THE POOR

ON THE

AUSTIN FARM, WEST ROXBURY.

1874.

IN BOARD OF ALDERMEN, Oct. 26, 1874.

Ordered to be printed, and sent to the Common Council.

JOHN T. CLARK, *Chairman.*

CITY OF BOSTON.

BOSTON, October 23, 1874.

To his Honor the Mayor and the City Council of Boston:—

GENTLEMEN: The Board of Directors for Public Institutions, in response to the communication of the City Council, requesting the reasons of the Board for deeming it *inexpedient* to erect the Home for the Poor upon the Austin Farm, respectfully submit the following

STATEMENT.

Lest the City Council should infer, from the opinion expressed by the Board under date of September 12th, namely, that it is *inexpedient* to locate the Home for the Poor on the Austin Farm, that the Board are indifferent to the erection of a suitable Home for the Poor, they would remind you that for several years past, and during the service of successive Boards of Directors, this subject has engaged their earnest and careful consideration. In every Annual Report, and in several special communications, the attention of the City Council has been called to the constantly increasing numbers of the inmates of Deer Island, and the urgent necessity of providing additional accommodations for the pauper class apart from the House of Industry.

This uncomfortable crowding, never greater than during the present year, instead of causing indifference on the part

of this Board, tends rather to increased solicitude in regard to the action of the City Council upon the important subject of providing adequate accommodations for the poor, and relieving the overcrowded buildings at the Island of a portion at least of the number to be provided for.

That the City Council may be more familiar with the facts in the present case, and thus better understand the views entertained by this Board, it may not be out of place to review the history of this project during the past few years. In the year 1869 the City Council, appreciating the lack of proper accommodation in this direction, and convinced of the necessity of erecting a new building for the poor, appropriated a sum sufficient to procure plans and estimates for such a building to be erected at Deer Island. The plans were accordingly prepared with great care, and were considered by experts as embodying all that sound judgment and experience could suggest in the proper classification and management of an institution of this character. They provided for a distinct classification of all the inmates, with such conveniences as were necessary in view of the economical care of the poor; and were intended to furnish accommodations for five hundred inmates. A site adjacent to that occupied by the Home for Pauper Children at Deer Island had already been selected. It was the very best location on the Island for such an institution, and has no superior, either in the harbor or inland. The plans were approved by the Board, and in 1870 were forwarded to the City Council. They were carefully considered by the Committee on Public Institutions, who, after some slight modification of the exterior, thereby slightly reducing the cost, though detracting materially from its beauty and architectural effect, recommended that the building be constructed at Deer Island, upon the site selected, and submitted the orders necessary to carry their recommendation into effect. These orders were adopted by the Board of Aldermen with but one dissenting vote, and

came up for a final vote in the Common Council, on the last day of the session of 1870. During the hurry of business incident to the closing meeting, by a singular clerical error, but one of the orders passed by the Board of Aldermen (that creating the appropriation of \$225,000) was acted upon by the Council, and the order to proceed with the construction of the building was not acted upon, although at that time the members of the Common Council supposed they were acting upon all the papers that came from the Board of Aldermen. The vote, as recorded in the Council, was forty-three in favor to fifteen against. The omission was not noticed until after the adjournment, too late to be rectified, and in consequence the measure could not be carried into effect. The City Council of 1871 gave the subject early attention, and while it was being considered by the Committee on Institutions, several remonstrances by citizens, against erecting the building at Deer Island, were presented, and no definite action was taken. In July, 1871, the City Council had under consideration the subject of a new Lunatic Hospital, new Home for the Poor, and repairs and alterations at the House of Correction, which were rendered necessary by the fire the winter previous. They were also considering the subject of remodelling the Roxbury Almshouse to meet the pressing requirements for more room; and, to obtain the opinion of this Board, an order was passed, under date of July 24th, "requesting the Board of Directors to furnish such information and suggestions as they may think necessary, for affording the City Council a correct knowledge of the general subjects under discussion pertaining to the Public Institutions."

In response to this order, information, at length and in detail, upon all these matters, was submitted in print, and formed City Doc. No. 76, 1871. A portion of the information contained in that document, in relation to the Home for the Poor, is here reproduced, as showing the opin-

ion then entertained by the Board upon a question, the aspect of which has not materially changed since that time:—

“The Directors were influenced, in the selection of the site at Deer Island, by considerations of the highest regard for the welfare of the poor, and for the best interests of the community. In the erection of the building for pauper children, the City Council provided for a separation of the children from the unfavorable influences of many of the adult paupers, and indicated an intention to locate the Home for the Poor on the Island. Should the institution be removed to the Highlands, a separate building for these children will be an imperative necessity. It should be as complete in all its accommodations and details as that now occupied at the Island, and which was erected at a cost of forty thousand dollars, under the most favorable circumstances, assisted by a large amount of prison labor. The site at Deer Island affords facilities for an economical management of the institution presented by no other in this vicinity. In erecting a Home for the Poor at this place, a large amount will be saved each year in the item of salaries alone. It is proposed that the Superintendent, Chaplain, Physician, Clerk, Engineer, and Farmer, of the institutions already there established, shall each perform his respective duties in this new institution. The additional employés required will consist of a limited number of matrons and assistants, whose salaries will be small in the aggregate. All supplies will be transported as at present, without additional expense, and the institution will be spared many annoyances from without incident to an inland location . . .”

No definite action resulted from this effort of the Board to supply adequate information to assist the City Council in reaching a correct understanding of the case. The project of refitting the Roxbury Almshouse was abandoned, and since then, with the exception of transferring the adult male paupers to Rainsford Island, no steps have been taken, until the present, to afford the desired relief.

The demand for additional accommodation steadily increasing, the Committee on Institutions of last year devoted considerable time to the subject of a suitable site for a Home for the Poor. Various places were visited and inspected, until at length, near the close of the year, the City Council purchased the Austin Farm, as in their judgment it combined the essential advantages requisite for the purpose.

During the present year the Board of Directors have prepared plans, specifications and estimates for the erection of suitable buildings to be used for a Home for the Poor in compliance with the request of the City Council. The general features of the plan of 1870 are incorporated in these plans, with such additions and changes as have been made necessary by the contemplated removal from Deer Island. The plans have been submitted to the City Council, have been considered by the Committee on Institutions, and now await the decisive action of the government.

Pending final action upon this important subject, the City Council now request of this Board their opinion as to the expediency of erecting the institution upon the site in question, and their reasons for their opinion.

This is the first opportunity the Board have had to express their views upon the site selected, and they now cheerfully comply with the request of the City Council. While negotiations for the purchase of the Austin Farm were pending, the opinion of individual members of the Board may have been expressed upon the relative merits of this and other sites, yet no official opinion upon the subject had been sought, until the order of Sept. 10th was adopted.

While the Board do not claim to possess superior wisdom in these matters, it is but just to assume that a Board having direct personal supervision of the institutions are, in the very nature of the case, in a position to render an intelligent and conclusive opinion as to the necessities and requirements of an institution of this kind. Without desiring to criticise

the knowledge or judgment of others, we wish only to record a deliberate opinion, based upon years of observation and actual experience in conducting the Public Institutions.

It will not be denied that the Austin Farm possesses natural and artificial attractions; and we doubt not that the committee that recommended the selection of this site, and the City Council that purchased it, were actuated by a desire to procure a beautiful and a commanding location for the Home for the Poor; but the main question to be considered by this Board in deciding as to the expediency of locating the institution thereon, is, Does it combine the requisite advantages for an economical and convenient management of such an institution?

To this question we are obliged to answer that it does not.

In considering the expediency of erecting a Home for the Poor upon the Austin Farm, questions of a general nature, bearing upon the subject of maintaining the city poor, present themselves, as well as the special subject of that particular location for such a purpose. We must constantly bear in mind the fact, that the character of the class requiring support in such a home is, owing to the great increase in population, continually changing from year to year. Private and religious charitable societies are increasing in number and usefulness, and are seeking out and assisting the worthy and deserving objects of their charity, who, through failure of health or business, or the death of their natural protectors, are obliged to receive the charity of others. The work of these societies in and around Boston is annually increased, and as a result leaves a larger proportion among the poor to be provided for at the public expense, of those who, by their own improvidence or vice, deprive themselves of the means of support. More than a third of the adult inmates of the almshouse have been sentenced inmates of the House of Industry for intemperance

or vagrancy, and who now alternate between the penal and charitable institutions.

We claim then, on general principles, that it is not only inexpedient, but unwise, to locate an institution of this character in the midst of a rapidly-increasing population, and upon a site, which, in view of the possibilities for its improvement, is altogether too valuable for such a purpose. In our opinion, such an institution should be, as far as possible, isolated from a growing community, yet so situated as to be easy of access; for we regard means of convenient and easy communication to be imperative. This farm is surrounded by costly and desirable estates, that in a short time will be demanded for building purposes and residences; and a Home for the Poor, so situated, will prove a detriment to the neighborhood.

The character of the site and its surroundings demands a more elaborate style of architecture than would be required in a more retired or isolated location. In preparing plans for a structure upon the Austin Farm, as requested by the City Council, the Board, as a matter of necessity, had some reference to the good appearance and effect of the building, with the view of erecting an institution that would correspond in some degree with the location, and be creditable to the city.

Again, we regard it inexpedient to erect this institution upon the Austin Farm, because, in our opinion, the available space is too small for the erection of the buildings. The surface of the lot is uneven, and to obtain a level space of sufficient size for the structure much grading will be necessary. Fully one-third of the farm is low and wet, and it is quite uncertain if a good foundation can be obtained without considerable trouble and expense.

The cost of erecting a building there will be very largely increased, from the fact that all the great amount of material used in its construction must be teamed to the site from the

city proper. After the institution is erected, the cost of maintenance will be greatly augmented from the same cause. All the supplies used must be freighted by rail, and then teamed a distance of nearly a mile to the institution, or must be carted from the warehouses in the city proper, a distance of five miles. This item of itself will amount to a very considerable sum. Every ton of coal, every barrel of flour, in fact every article in the nature of supplies, great in the aggregate, required by a large institution, will be subjected to the increased cost of transportation, and the running expenses will be unduly enhanced.

To prevent the inmates from roaming the neighborhood, and becoming a constant source of annoyance, to say the least, it will be necessary to surround the farm with a high stockade fence.

When we consider the character of the institution; the difficulty of confining the inmates to the grounds; the nature of the site, and its location in a beautiful section of the city soon to be demanded for improvement; the cost of grading, construction, transportation and maintenance, we cannot forbear the expression that, in our opinion, it is altogether inexpedient to locate the institution upon the Austin Farm.

Under the original order of the City Council, the Board, having stated the fact that in their opinion it is inexpedient to erect the Home for the Poor upon the Austin Farm, and thus fully expressed the reasons and conclusions upon which that opinion is based, would have committed the subject to the judgment and decision of the City Council. But, in addition to the original request, the City Council have desired the Board "to report what in their opinion is a suitable site, and their reasons for such a selection."

To this request we would respectfully reply, that some of the objections that have been urged against the Austin Farm apply with equal force to any inland site that is not easily accessible by railroad.

A proper compliance with the request of the City Council to select and recommend a suitable location, and specify the reasons for the selection, would require considerable time, and involve an examination of several locations.

The plans submitted by the Board, in 1870, for a building at Deer Island contemplated an expenditure of about \$225,000, or less than one half the amount which will be required to erect the proposed building on any other location. At that time the financial condition of the city was such that the expense would have been much less of a burden than it can be at the present. Since then the disastrous fire has occurred, and the heavy expenditures resulting from the calamity, and the great addition to the city debt in consequence of the fire, and annexation, demand the most careful and economical expenditure of the public money. In view of these facts, which may well arouse our earnest attention, the Board, in the renewed consideration of this subject, with reference to replying to the communication of the City Council, have been led to believe, that possibly this great expenditure may, *for the present*, be avoided, and that it may not be necessary to proceed *at once* to the erection of a new Home for the Poor. In view of this possibility the Board beg leave, respectfully, to submit the following suggestions :

In the summer of 1872 it was decided to remove the adult male paupers to Rainsford Island, and authority was granted by the City Council to fit up the buildings at that place for their reception. Steam apparatus for heating, cooking, and laundry purposes was introduced and the main building thoroughly repaired and made comfortable and pleasant, at an expenditure of \$18,642. During the last year the stone building has been put in good order and fitted for hospital purposes, with steam-heating apparatus, and now all the room in the main building is used for the males who are not in need of hospital treatment. The amount expended in repairs and alterations during the past year was \$11,454,

making a total expenditure at Rainsford of \$30,096. The capacity of the main building can be increased by the addition of wings, as such enlargement becomes necessary, and the place still continue to be used as a home for the men. The institution there can be easily supplied by the city steamer; and the cost of superintendence and management is small. It is accessible to the city and Deer Island; the men are comfortable and contented, and thus far the occupation of the Island has been more satisfactory in its results than was at first anticipated. If the City Council should decide to retain this location as a home for the adult males, it will be necessary to appropriate a sufficient amount for the erection of wings to the main building.

By the annexation of Charlestown and Brighton the city came into possession of two almshouses. That belonging to Charlestown is situated on the Malden side of Mystic river, comprising a brick building and about three acres of land. The building is in good condition, and can accommodate about one hundred and twenty-five inmates. With a comparatively small outlay, it can be made a very comfortable home. It is easily accessible, and a horse-railroad passes the door. The almshouse of Brighton is a wooden building well located on Lake street, not far from Chestnut-hill reservoir. It can be fitted up at small expense to accommodate from twenty-five to thirty inmates. It is proposed to classify the adult female paupers now at Deer Island, and remove them to these two institutions, where they will be provided for in a comfortable manner, and the room vacated by them will be used to relieve the House of Industry, which is now overcrowded.

The recent modifications in the laws of settlement, whereby a man gains a settlement in our city by a residence of five years and the payment of three taxes, and women by five years' residence *without* taxes, will largely increase the number who will apply to the city for aid and support. In

this connection, the question of the necessary and proper aid to bestow becomes one of great importance. Though the administration of partial support and out-door relief is in charge of another Board, yet the Directors are constrained to say that, in their opinion, a more liberal policy of relief on the part of the City Council would do much to reduce the number who now seek permanent relief in the almshouse. The experience of this Board proves that there are cases that, with more liberal assistance in time of sickness or emergency, may be prevented from seeking a home at the public expense. During the winter season, especially, the city should not hesitate to grant sufficient appropriations to relieve the wants of those who with assistance may be able to keep their families together at less expense to the city than if provided for in a Home for the Poor.

The Board of Directors have thus reviewed the subject committed to them by the City Council. It has engaged their earnest and continued consideration. They have been influenced by a desire to submit such facts and suggestions as will lead the Council to a speedy and correct solution of the important question of providing adequate accommodation for the poor. They have considered the financial condition of the city; the general character of the class to be supported; the site in question, and the plans of the building; and have suggested a method by which, as it appears to them, the question can be decided for some considerable time without a large expenditure of the public money. They recommend the enlargement of the building at Rainsford Island for the accommodation of the men; the removal of the women to Charlestown and Brighton, and the increase of out-door relief with a view to prevent the poor from becoming permanent inmates of the almshouse. Of the necessity of some immediate provision for the pauper class there is no room for argument. It is conceded by all; and

the directors submit the case to the good judgment and discretion of the City Council, trusting it will receive immediate and decisive action.

Respectfully,

J. P. BRADLEE,

President.

City Document. — No. 92.

CITY OF BOSTON.



MINORITY REPORT

OF THE
DIRECTORS OF PUBLIC INSTITUTIONS

IN THE AGREEMENT OF JANUARY, 1874.

HOME FOR THE POOR

AUSTIN FARM, WEST BOKSBURY

1874.

IN BOARD OF ALDERMEN, Dec. 26, 1874.

Ordered to be printed, and sent to the Common Council.

JOHN T. CLARK, *Printer.*

CITY OF BOSTON.

Boston, October 24, 1874.

The undersigned, members of the Board of Directors for Public Institutions, dissent from the opinion of the majority of said Board as to the expediency of erecting a Home for the Poor on the Austin Farm, and beg leave to state, briefly, their reasons therefor.

The urgent necessity of providing additional accommodations for the poor is fully admitted by the majority, and the undersigned have no need to present anything further upon that point. The only question is as to the character of the accommodations to be furnished.

After doing everything in their power to commit the city to the construction of a large and costly almshouse on Deer Island, the majority of the Board of Directors have suddenly discovered that no new structure is necessary, and that it would be an economical arrangement to organize a number of separate institutions for the care of the poor in different sections of the city. The motive for this change of policy is to be found in the fact that the City Council has determined not to provide permanent accommodations for the poor in connection with the penal and reformatory institutions, or in any locality difficult of access for the friends of the inmates.

If the City Council of last year, or of this year, had authorized the erection of a building on Deer Island, in accordance with plans submitted by the Board of Directors

in 1870, and estimated to cost over three hundred thousand dollars, nothing would have been heard from the majority about the economy of providing for the poor in several different localities. The real objection to the Austin Farm is that it is not located on Deer Island. In stating the rules which should govern the selection of a location, the majority have ingeniously endeavored to make it impossible to select any place on the main land. Some of the objections, they say, which have been urged against the Austin Farm apply with equal force to any *inland* site that is not easily accessible by railroad. They want a place in the immediate neighborhood of the business portion of the city, which is not only isolated at present but likely to remain so, and at the same time on the line of a railroad. The only place that would answer such a description would be a bog or marsh with a railroad running through it. The Austin Farm is altogether too attractive a spot for such a gloomy structure as the majority purpose to erect for the wretches who find their way into our almshouse. "More than a third," they say, "of the adult inmates of the almshouse have been sentenced inmates of the House of Industry for intemperance or vagrancy, and who now alternate between the penal and charitable institutions." That being the case, they propose to treat all paupers as though there was very little to choose between a pauper and a criminal.

If there is any one question concerning the management of our public institutions which would appear by the votes of the City Council, and the expressed will of the people, to be finally and forever settled, it is that permanent accommodations for the poor of this city should be furnished in a decent locality on the main land.

When the project of the Directors for the location of a Home for the Poor on Deer Island was about to be carried out, the largest tax-payers in the city, and the most liberal contributors to the societies for the relief of those whom the

majority designate as "worthy and deserving objects of charity," united in remonstrating against the proposed action, "believing," as they stated, "that such an establishment should be so placed as to avoid any association with penal institutions, and to preserve for its inmates, as far as its due regulation will permit, reasonable opportunities for intercourse with their friends." These are the sentiments of the people who do the most towards supporting both the public and the private charities.

In his Inaugural Address to the City Government of 1873, Mayor Pierce said : —

"The proposition to provide a Home for the Poor, apart from the penal and reformatory establishments, meets my hearty approval. Paupers and criminals should not be brought together under the same roof, or on the same plot of ground, or placed in such relations to each other that by any possibility they can be classed together. The present system is discreditable, and should not be tolerated beyond the time absolutely required to make different provisions."

Mayor Cobb, in his Inaugural Address at the beginning of the present municipal year, said : —

"A site for a new almshouse having been purchased by the last City Council, I trust there will be no delay in proceeding to erect suitable buildings. That the unfortunate poor of our city should be provided with a fitting refuge, without being subjected to the presence and contaminating influences of the vicious and degraded, has been settled practically by the votes of previous Councils, and by public opinion."

The real reason for opposing the location on the Austin Farm has been already stated. The ostensible reasons given by the majority are briefly these: That the available space is too small for the erection of the buildings. That the place is inaccessible. That it would be difficult to confine

the inmates. That the situation is such as to require the erection of an expensive structure.

With one exception, these objections are simply a repetition of those offered by some members of the Committee on Institutions of last year. The majority of the Board of Directors are entitled to the credit of discovering that the available space is too small. The estate contains fifty acres, of which all but twelve are upland. If thirty-eight acres do not furnish sufficient available space for a single institution, what becomes of the proposition to locate upon Deer Island?

Upon the question of accessibility, the committee of last year stated that "good facilities are afforded for transportation by the Hartford & Erie Railroad. All the materials required for erecting new buildings can be shipped from the east, or from Quincy, delivered at the dock, and easily transported by cars to the ground." As Roxbury stone is to be used for the foundation, it can be delivered on the ground at less cost than it could be in any other locality.

The difficulty of confining the inmates is no greater, of course, at the Austin Farm, than at any other place on the main land.

The statement that it would be necessary, on account of the character of the neighborhood, to erect an expensive building on this site, has no force whatever. There is not a particle of reason for erecting a more elaborate building on the Austin Farm than on Deer Island. A building on the island would be subject to general observation to a much greater extent than on the farm.

If members of the government will look at the matter exactly as it is, they cannot help seeing that it would be impossible to find another place, for any reasonable price, so near the centre of the city, possessing equal advantages with the Austin Farm for an institution of the kind proposed to be located there.

Instead of depressing the value of real estate in the vicin-

ity, it will be more likely to have a contrary effect. A Home for the Poor is not, and ought not to be regarded, as an obnoxious institution, notwithstanding the low opinion which the majority entertain of the inmates.

In reply to the suggestion of the majority, that, in view of the large expenditures incurred by the city in consequence of the fire of two years ago, it may not be necessary to proceed at once to the erection of a new building, the undersigned would state that, if the representations of the Directors during the past six years as to the necessity of providing permanent additional accommodations for the poor were well founded, the work should be carried forward without delay. Whatever is essential to be done, the city can as well afford to do to-day as it could in 1870.

Mayor Cobb, in his address from which we have already quoted, points out the way in which the means for erecting the proposed building can be provided without adding to the burdens of the tax-payers, namely, by using the unexpended balance of the appropriation for a new almshouse at Deer Island, amounting to \$150,000, and the remainder of the appropriation for a new lunatic hospital, made in 1867, amounting to \$103,000. If that is not sufficient, the proceeds from the sale of the old almshouse estate in Roxbury will more than cover the deficiency.

There are other things to be considered in connection with this question of providing for the poor. In their report at the close of last year the Committee on Public Institutions said, that although they "had not recommended to the City Council any definite action upon the suggestions of the Mayor relative to the removal of the House of Correction from South Boston and the removal of the House of Reformation for Juvenile Offenders from Deer Island, they had prepared the way for definite action during the ensuing year by the selection of a new location for the Home for the Poor. The removal of the paupers from Deer Island to an establishment

on the main land was preliminary to changes in the other institutions, which would follow naturally and in the order of their necessities." If contracts are made this year for the new almshouse, it will not be ready for occupancy until the latter part of 1876, and by that time the temporary accommodations suggested by the majority will, in view of the recent modifications in the settlement-laws increasing the number of persons entitled to relief, be entirely inadequate. The rapid occupation of the South Boston Flats for business purposes necessitates prompt action in securing another location for the House of Correction, so as to liberate the extensive tract of land and flats connected with that institution.

In a report to the City Council, in 1872, recommending the removal of the House of Correction from South Boston, it was estimated that the total value of the city property at that place after the removal would be \$950,090, and that the value of the property would be *increased* \$564,429 by transferring the institutions to another locality. Provision is now being made by the State for the care of the insane poor belonging in this city; and a wise economy would suggest that no time should be lost in carrying out the plan by which a large amount of property valuable for business purposes will be brought into the market, and our public institutions placed upon a respectable and permanent foundation.

JAMES POWER.
BENJ. DEAN.

City Document.—No. 94.

CITY OF BOSTON.



REPORT

OF THE

MYSTIC WATER BOARD,

ON AN

ORDER OF THE CITY COUNCIL

RELATING TO

SEWERAGE.

CITY OF BOSTON.

OFFICE OF THE MYSTIC WATER BOARD,
BOSTON, October 28th, 1874.

To the City Council of the City of Boston:—

In compliance with an order of the City Council, approved by the Mayor, June 19, 1874, requesting the Mystic Water Board to "prepare and submit an estimate of the expense of constructing a sewer for the purpose of carrying away the impurities which now discharge into Mystic pond from the towns of Winchester and Woburn and certain tanneries and other manufactories," the Board have taken action, and respectfully ask leave to state,—

That very soon after the passage of the order, they employed Mr. Thomas Doane, a civil engineer of unquestioned reputation and ability, to make the necessary observations and surveys, and to prepare an estimate of the cost of a sewer of sufficient capacity to take away the impurities which are now discharged from the places named in the order, into streams which find their way into the Mystic pond. Mr. Doane has been carefully over the ground, has made the surveys and estimates, and we present the result of his labors in his own report, hereto annexed. The estimate is for the construction of sewers for a length of 79,983 feet, at a cost of \$160,000. The surveys have been carefully made, the sewers all actually located upon the ground, and the size of each is believed to be equal to the need in each case, and the Board are of opinion that with the present prices of materials and labor the work can be done for the

sum named. What proportion of the expense of constructing the sewers, or what amount should be paid for the right to enter them after they are built, by the owners of manufactories or dwellings who are now, it is believed, unlawfully draining into the tributary streams of Mystic pond, is a question which the Board cannot answer, and which will perhaps require legal action to determine; but it seems reasonable only to suppose that a share of the cost should be borne by these parties. If a system of sewerage for the towns of Woburn, Winchester and Medford was to be adopted and paid for, as it should be, by the places benefited, it would be requisite to do the work on a larger scale and at a greatly increased cost; but it is believed that the object contemplated in the order of the City Council, the carrying away of impurities which now discharge into streams connected with Mystic pond, can be effectually accomplished by the construction of the sewers proposed in the report of Mr. Doane; and for the reasons stated by Mr. Doane in his report, the Board are of the opinion that there is but little liability of any increase in the kind of manufacturing, which is so objectionable and troublesome along the course of these streams.

For the Mystic Water Board,

TIMOTHY T. SAWYER,

President.

CHARLESTOWN, Oct. 7th, 1874.

To the Mystic Water Board,

HON. T. T. SAWYER, *President*: —

At your request I have made, as I suppose, the necessary examinations, surveys and estimates, contemplated in the order of the City Government of Boston, dated June 19th, 1874, which is in the following words so far as it relates to the subject of the order: "An estimate of the expense of constructing a sewer for the purpose of carrying away the

impurities which now discharge into Mystic pond from the towns of Winchester and Woburn, and certain tanneries and other manufactories."

I have now the honor to submit the following statement, which may perhaps aid you in making up your report to the City Council.

I have not thought the wording of the aforesaid order broad enough to cover more than a purpose to take away the impure waters which *now* discharge into Mystic pond, and therefore have not touched upon the matter of the general sewerage of the two towns named.

Should it, however, be deemed best to look into this matter, I think the locations of the lines of sewers already made will be found very nearly right for the thorough drainage of these towns.

The following is a list of the principal sources from which impurities are now discharged into Mystic pond : —

CUMMINGSVILLE IN WOBURN.

Bishop & Co.'s Tannery.

Cummings & Co.'s Tannery.

TOWN MEADOWS IN WOBURN.

Kinney's Tannery.

Fifty dwelling-houses upon Town Meadows.

Dow & Co.'s Tannery.

RUSSELL BROOK.

Winn's Tannery.

Murphy & Plummer's Tanery.

Trowan's Tannery.

Linnell, Houston & Co.'s Tan-

Skinner & Co.'s Tannery.

nerly.

Pollard & Co.'s Tannery.

Bryan's Tannery,

Blake, Hinekey & Co.'s Tan-
nery,

Eustis Cummings & Co.'s Tan-
nery.

Shaw & Taylor's Tannery.

Crane's Tannery.

Thompson's Tannery.

And 100 dwelling-houses situated near the brook, and Conn's Tannery.

The drainage from the gas works is very slight, and only when making gas, which is principally in the night, when the sewers will not be in use by the tanneries.

ABAJONNA RIVER.

Frye & Thompson's Tannery.

Maxwell & Sons' Tannery.

Moseley's Tannery.

STONEHAM BRANCH.

Dyke's Tannery in Stoneham Village.

The Glue Works in East Woburn.

WINCHESTER VILLAGE.

Batchelder & Furbush's Tannery.

Waldmeyer's Tannery.

61 dwelling-houses now draining into Wedge pond and the Mill pond.

Bacon's Felting Factory.

Some of the brooks which now drain away the impure waters from the tanneries might apparently with propriety be taken wholly into the sewers; but it is important to save to the pond the natural drainage, and the storm-waters of the considerable areas tributary to these filthy streams, and not to waste them through the sewers. And, further, if provision were made in the sewers to take away the storm-waters discharged through these streams, they must be made very much larger and more expensive than if intended only for the regular discharges from the tanneries.

Lines of sewers have therefore been run to all the sources of impure water, and no reliance is placed upon natural water-courses.

There are a very few manufactories at North Woburn which discharge impure waters, but as with one exception

they are currying establishments which use very little water, and are very remote from Mystic pond, no sewers have been run to them.

QUANTITIES OF IMPURE WATER.

The maximum estimate of water used in tanning a hide, or two sides, is 500 gallons. Probably 100 gallons of this water is used in boilers, and evaporated from hides drying upon the racks; 400 gallons will then be the amount per hide of impure water discharged, and for which provision must be made in the sewers. By ascertaining the number of hides tanned by each establishment, and multiplying by 400, we get nearly the maximum quantity of water which is taken to be uniformly discharged through a period of 10 hours.

The quantities discharged from other establishments than tanneries have been estimated from the means at hand, such as measuring tanks and ascertaining how many times full per day they were used, or by measuring the delivery of pumps.

The quantities of water discharged from dwelling-houses is estimated at 60 gallons per day to each of eight persons to each house.

When it has been possible to compare the quantities obtained as above, with the flowage in the brooks, there has been found a very close agreement.

The quantities thus found, and for which provision must be made in the sewers, are as follows:—

From Cummingsville	98,800	galls. per day.
From town meadows	86,800	“ “
Or a total for the Cummingsville branch	185,600	“ “
From Russell brook	373,900	“ “
From the Abajonna branch, includ- ing that from Stoneham	198,400	“ “
From all the above and from Win- chester village a total for the main sewer is found of	843,510	“ “

To provide for every emergency, the above quantities have been doubled in estimating the size of sewers when running full.

There is probably not to be an increase in this kind of manufacturing in this vicinity, as the lands and waters are becoming too valuable, the hides and bark too distant, and the accumulating population too restive under the necessary pollution of air and water to permit it.

For all sewers of 12 inches diameter or under, earthen pipe have been estimated for, while all over 12 inches are intended to be in brick, which now is cheaper.

In making up the estimates, nothing has been included for bringing the sewage to the main lines from the houses and tanneries. This must be left for individual and town action.

Within the limits of Woburn all the houses, the drainage of which is herein estimated for, are at a sufficient elevation, I think, to drain into the sewers. In the village of Winchester the 61 houses which now drain into the waters of Mystic pond cannot all drain from a lower point than the tops of their cellars; but if all sewage is thus discharged, the cellar drainage is less objectionable, and even this evil would be almost entirely remedied by taking away Whitney's dam, and filling up the entire area occupied by the ponds, except a passage for the Abajonna river and the outlet of Horn and Wedge ponds.

The estimates include a catch-pit for each manufacturing establishment and tannery, and also for each junction of sewers. Those put into the main sewer of 2.25 feet diameter are 5.50 feet long and 4.50 feet wide inside; and those in the smaller sewers are 4.50 feet long and 3.50 feet wide, and their flows are all at a level of three feet below the bottom of the outlet sewer. These pits should be provided with spouts to carry the running water around while the solid accumulations are being removed from them.

The tanneries, in many cases, discharge their waters after use into the water-courses at very nearly their surface level. It will, therefore, be almost impossible to place the sewers low enough in the ground to take the discharges from all the tanneries by gravity, without submerging them at excessive cost. This will necessitate the remodelling, to a small extent, of some of the tanneries, or the pumping of the sewage into the catch-pits.

LOCATION OF SEWERS.

The Mystic water basin, in its present condition, and in view of the changes proposed in it, is most unfortunately situated for drainage.

The upper Mystic pond is now raised to such a level as to flow back up the Abajonna river to Whitney's dam at Winchester village. It is now proposed to raise the lower pond to the same level.

It is also proposed to make one or more extensive storage basins on the Abajonna river, near East Woburn, and another above Horn pond, which will flow back to Cummingsville.

As it is a necessity to provide storage for water here, if the Mystic water works are to be made the most of, I have thought it imperative to locate the sewers outside of all these basins.

The outlet of the main sewer is placed at Mystic river, near the point where the Mystic water-pipes pass under the river. The line is then run for grade, as it is called; that is, placed in such a position as to secure uniformity of grade and uniformity of depth in the ground. This makes the sewer in some portions quite sinuous.

The line, after crossing High street in Medford, runs through the land of Mr. Brooks to the easterly margin of the proposed lower pond and along it and the present upper pond to the Medford and Winchester town line. Near this point it leaves the pond, and is laid in the bed of the abandoned

Middlesex canal, until it strikes the westerly line of the Boston & Lowell Railroad, which it follows to Winchester village, crossing the Abajonna river near where the railroad crosses it, and encroaching upon the right of way of the railroad at its Winchester engine-house, in order to pass through and around a heavy ledge.

Thence it runs through the public square, and along Main street and under the Woburn Branch Railroad, to a point near Moseley's tannery, where it receives the lines coming from Russell brook and down the Abajonna valley.

The Cummingsville branch joins the above main line in Main street and follows along the northeasterly side of Wedge pond, Horn pond outlet, Horn pond as raised, and the proposed storage basin to Bishop's tannery.

The Russell's brook branch joins the main sewer near Moseley's tannery, and follows along the northeasterly side of the Woburn Branch Railroad, within its right of way, up to Woburn village, and thence by streets and over private lands, near Russell brook, to Salem street.

The Abajonna branch begins at the main sewer near Moseley's and extends along the westerly side of the Abajonna river and its two proposed storage basins, to a point opposite Frye & Thompson's tannery.

The Stoneham branch leaves the Abajonna branch sewer below the storage basins proposed, crosses the Abajonna river, passes by and below the new glue works, and over private lands, till it strikes the street near the Stoneham cemetery, whence it runs in streets to Dyke's tannery in Stoneham village.

GRADES.

The peculiar location of the sewers for such long distances by the side of level waters involves grades of slight inclination. None, however, is less than 6 in 10,000. It is believed the velocities due to this inclination will carry through every-

thing likely to find its way in except stones and gravel and deposits of lime. At every inlet of impure water there is a catch-pit, and at short intervals below others are placed, so that the heavier portions will early be deposited and generally where they can be removed.

There being but one inlet to the main sewer below Winchester village, it is believed that all the deposits will be made above the village, and that the water of the sewer below will carry very little impurity that is not held in solution.

ESTIMATE OF COST OF SEWERS.

From Mystic river to Moseley's junction.

House over outlet at Mystic river	\$707 00
19,600 lineal feet of brick sewer 2.25 feet in diam., 1 brick thick, 1,214,220 bricks laid, @ \$25 per M.	30,355 50
11 large catch-pits, @ \$125	1,375 00
Bridge at Abajonna river station 134.90	2,028 00
Bridge at Wedge pond outlet	3,300 00
40,788 cub. yards' excavation and refilling, @ .40	16,315 20
13,028 cubic yards' filling, @ .30	3,908 40
2,190 " " ledge, @ 3.00	6,570 00
8 houses on Main street to be raised, @ \$200	1,600 00
9.8 acres of right of way, 2 rods wide, @ \$200	1,960 00
Extra for going under Woburn Branch Railroad	500 00

Carried forward,

\$68,619 10

Brought forward,

\$68,619 10

UP THE ABAJONNA.

*From Moseley's junction to Stoneham
junction.*

8,100 feet of brick sewer 1.25 feet diam., 1 brick thick, con- taining 280,665 bricks, laid, @ \$25 per M.	\$7,016 62
5 small catch-pits, @ \$100 . . .	500 00
Culvert at sta. 335, 29 yds. @ \$8 . . .	232 00
6,242 cubic yards of excavation and refilling, @ 33 cts.	2,059 86
560 cubic yards of filling, @ 30 cts. . . .	168 00
3 acres of right of way, 1 rod wide, @ \$100	300 00
Extra for going through Lowell Railroad bank	300 00

10,576 48

UP THE ABAJONNA.

*From Stoneham junction to Frye & Thomp-
son's tannery.*

4,700 lineal feet 6-inch Scotch pipe, @ 30 cts.	\$1,410 00
Add 2 % for breakage	28 20
Add 20 % for laying	282 00
3 small catch-pits, @ \$100	300 00
2,915 cubic yards' excavating and refilling, @ 33 cts.	961 95
202 cub. yards' filling, @ 30 cents	60 60
1.8 acres of right of way, 1 rod wide, @ \$100	180 00
Extra for going under Stoneham Branch Railroad	50 00

3,272 75

Carried forward,

\$82,468 33

Brought forward,

\$82,468 33

From Stoneham junction to Stoneham village.

2,300 lineal feet 10-inch Scotch pipe, @ 70 cents . . .	\$1,610 00	
Add 2 % for breakage . . .	32 20	
Add 20 % for laying . . .	322 00	
4,800 lineal feet 6-inch Scotch pipe, Glue Works to Main street, @ 30 cents . . .	1,440 00	
Add 2 % for breakage . . .	28 80	
Add 20 % for laying . . .	288 00	
1,660 lineal feet Scotch pipe 8-inch, Main street to Dyke's, @ 45 cents . . .	720 00	
Add 2 % for breakage . . .	14 40	
Add 20 % for laying . . .	144 00	
5 small catch-pits, @ \$100 . . .	500 00	
Bridge at Canal station, 670 + 50 . . .	892 00	
Bridge over Abajonna station 673 + 50 . . .	3,236 00	
5,386 cubic yards' excavating and refilling, @ 33 cents . . .	1,777 38	
4,655 cub. yards' filling, @ 30 cts. . .	1,396 50	
259 cubic yards' rock, @ \$6 . . .	1,554 00	
2 acres of right of way, 1 rod wide, @ \$100 . . .	200 00	
Extra for going through Stoneham Branch Railroad bank . . .	300 00	
		14,455 28
<i>Carried forward,</i>		96,923 61

Brought forward,

\$96,923 61

RUSSELL BROOK BRANCH.

*From Moseley's junction to Winn's tannery,
Woburn.*

6,100 lineal feet 12-inch Scotch	
pipe, @ 84 cents . . .	\$5,124 00
Add 2 % for breakage . . .	102 48
Add 20 % for laying . . .	1,024 80
1,250 lineal feet 10-inch Scotch	
pipe, @ 70 cents . . .	875 00
Add 2 % for breakage . . .	17 50
Add 20 % for laying . . .	175 00
2,200 lineal feet 8-inch Scotch	
pipe, @ 45 cents . . .	990 00
Add 2 % for breakage . . .	19 80
Add 20 % for laying . . .	198 00
13 small catch-pits, @ \$100 . . .	1,300 00
7,054 cub. yards' excavating and	
refilling, @ 33 cents . . .	2,327 82
2,038 cub. yards' filling, @ 30 cts. . .	611 40
Bridge over Russell brook, sta-	
tion 223	438 00
36 acres of right of way, 1 rod	
wide, @ \$100	360 00

13,563 80
*From Main street, Winchester, to Bishop's
tannery in Cummingsville.*

16,750 lineal feet 12-inch Scotch	
pipe, @ 84 cents . . .	\$14,070 00
Add 2 % for breakage . . .	281 40
Add 20 % for laying . . .	2,814 00
1,750 lineal feet 8-inch Scotch	
pipe, @ 45 cents . . .	787 50
Add 2 % for breakage . . .	15 75

Carried forward,

\$17,968 65

\$110,487 41

<i>Brought forward,</i>	\$17,968 65	\$110,487 41
Add 20 % for laying . . .	157 50	
7 small catch-pits, @ \$100 . . .	700 00	
Culvert (2 ft.) at station 491, 18 yards, @ \$8	148 00	
Culvert 5-feet arch at station 534, 88 yards, @ \$10	880 00	
Culvert 4-feet box at station 534, 68 yards, @ \$8	548 00	
Culvert 3-feet box at station 550, 60 yards, @ \$8	480 00	
Culvert 2-feet box at station 561.50, 46 yards, @ \$8	368 00	
8,512 cub. yards' excavating and refilling, @ 33 cents	2,808 96	
7,703 cub. yards' filling, @ 30 cts.	2,310 90	
265 cubic yards' rock, @ \$6	1,590 00	
7 acres of right of way, 1 rod wide, @ \$100	700 00	
		28,660 01

LAKE ST. BRANCH, WINCHESTER.

*From sewer in Main street to Batchelder & Fur-
bush's tannery.*

1,250 lineal feet 6-in. Scotch pipe, @ 30 cts. /	\$375 00	
Add 2% for breakage	7 50	
Add 20% for laying	75 00	
1 small catch-pit, @ \$100	100 00	
12 feet iron pipe in bridge, station 768	20 00	
327 cubic yards' excavating and refilling, @ 33 cts.	107 81	
2,483 cub. yards' filling, @ 30 cts.	744 90	
Extra for crossing bridge	50	
		1,480 21
<i>Carried forward,</i>		\$140,627 63

Brought forward, \$140,627 63
From junction with Abajonna branch to Maxwell's tannery.

743 lineal feet 4-inch Scotch pipe,	
@ 27	\$148 60
Add 2 % for breaking	2 97
Add 20 % for laying	29 70
1 catch-pit, small, @ \$100	100 00
Pipe culvert at station 761, 20 ft.	
12 in.	20 00
310 cubic yards, partly wet, excavating and refilling, @ 50 cts.	155 00
547 cubic yards filling, @ 30 cts.	164 10
Extra for going under Lowell Railroad	100 00
	720 37

From main sewer to Bacon's felting mill.

1,000 lineal feet 6-in. pipe, whole cost estimated at	2,000 00
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TOWN MEADOWS BRANCH.

From junction near Dow's tannery through town meadows to Kinney's.

6,540 lineal feet 9-inch Scotch pipe, @ 55 cts.	\$3,597 00
Add 2 % for breakage	71 94
Add 20 % for laying	719 40
3 small catch-pits, @ \$100	300 00
4,428 cub. yards' excavating and refilling, @ 33 cts.	1,461 24
319 cubic yards' filling, @ 30 cts.	95 70
2.3 acres of right of way, 1 rod wide, @ \$100	230 00
	6,475 28

Carried forward, \$149,823 28

Brought forward,

\$149,823 28

POLLARD'S BRANCH.

*From junction with Russell-brook sewer to
Pollard's tannery.*

1,300 lineal feet 4-inch Scotch pipe, @ 20 cts.	\$260 00	
Add 2 % for breakage	5 20	
Add 20 % for laying	52 00	
1 small-catch pit, @ \$100	100 00	
623 cubic yards, wet, excavating and refilling, @ 60 cts.	373 80	
98 cubic yards' filling, @ 30 cts.	29 40	
$\frac{1}{2}$ acre of right of way, 1 rod wide, @ \$100	50 00	
Extra for going under Russell brook	50 00	
		920 40
Total		\$150,743 68
Engineering, superintendence, etc., say		9,256 32
		\$160,000 00

The total lengths of sewers estimated for above
are as follows : —

Mystic river to Moseley's	19,600 feet.
Moseley's to Stoneham junction	8,100 "
Stoneham junction to Frye and Thompson's	4,700 "
Stoneham junction to Stoneham village	8,700 "
Moseley's to Winn's tannery	9,550 "
Main st., Winchester, to Cummingsville	18,500 "
Dow's junction, through town meadows, to Kinney's	6,540 "
Pollard's branch	1,300 "
Batchelder and Furbush's branch	1,250 "
Maxwell's and Sons' branch	743 "
Bacon's branch	1,000 "
Total	79,983 "

Equal to 15.15 miles. At a total cost of \$160,000.00 the average estimated cost per foot is \$2.00.

Should the town of Medford oppose or successfully resist the discharge of this sewage into Mystic river above its village, it will require an extension of this sewer, or a contribution towards a still larger one, to be built by the town through a distance of $2\frac{3}{4}$ miles, equal to 14,520 feet, at a cost of \$3.50 per foot, to discharge at a proper point below the village. This will amount to \$50,820.

I hand you herewith a plan from which you will be able better to understand the locations of the various lines of sewers.

THOMAS DOANE.



City Document. — No. 95.

CITY OF BOSTON.



AUDITOR'S MONTHLY EXHIBIT.



NOVEMBER 4, 1874.

CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS
FOR 1874-75.

MONTHLY EXHIBIT.

OFFICE OF THE AUDITOR OF ACCOUNTS, }
CITY HALL, Nov. 3, 1874. }

TO THE HONORABLE CITY COUNCIL:

GENTLEMEN, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1874-75, as shown in the books in his office, November 1, 1874, including the November draft, being seven months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,

Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Addition to City Hospital . . .	\$190,000 00		\$190,000 00
Advertising	6,000 00	\$2,049 21	3,950 79
Annuities	512 00	245 00	267 00
Armories	25,000 00	13,928 63	11,071 37
Assessors' Department	104,729 00	75,778 94	28,950 06
Bells and Clocks	6,475 00	1,654 77	4,820 23
Bennett Grammar School-house, } Brighton }	148,230 50	31,354 68	16,875 82
Board of Health	102,100 00	35,772 33	66,327 67
Boston Harbor	10,000 00	3,048 27	6,951 73
Bridges	52,000 00	24,529 70	27,470 30
Brighton Fire Alarm Extension .	6,460 00	4,562 17	1,897 83
Cedar Grove Cemetery }	4,218 40	13,529 54	(\$1089.23 prov'd for.)
Add Revenue rec'd, \$8,221.86 }			
Charles River and Warren Bridges	45,102 00	4,341 49	40,760 51
Chestnut Hill Driveway	18,500 00	10,906 31	7,593 69
City Hospital	120,000 00	65,346 49	54,653 51
City Registrar's Department . .	12,400 00	5,645 25	6,754 75
Common, etc.	3116,400 00	77,351 37	39,048 63
Contingent Funds, viz. :			
Joint Com'ttees of the City Council	4,000 00	2,017 55	1,982 45
Mayor	1,500 00	238 50	1,261 50
Board of Aldermen	43,000 00	1,750 75	1,249 25
Common Council	3,000 00	1,982 87	1,017 13
County of Suffolk	350,000 00	187,186 77	162,813 23
East Boston Ferries	270,000 00	171,153 98	98,846 02
Elevator, City Hall	12,000 00	8,429 04	3,570 96
Engineer's Department	30,881 00	14,176 48	16,704 52
Engine House and Land, Dover St.	45,000 00	23,083 55	21,916 45
Engine House and Land, Parker St.	40,000 00	11,157 50	28,842 50
Engine House and Land, Fulton St.	45,000 00		45,000 00
Evergreen Cemetery }	5738 00	941 38	292 62
Add Revenue received, \$496 . }			
Fire Department	695,742 00	380,160 68	315,581 32
Fire Alarm Telegraph	43,215 00	15,407 45	27,807 55
Grammar School-house, Dudley } District }	49,930 99	49,924 59	6 40
Grammar School-house, Everett } District, Ward 16 }	20,000 00		20,000 00
Grammar School-house, Ward 15, } Building }	46,265 20	43,207 31	3,057 89
Additional Land	5,000 00	5,000 00	
Carried forward	\$2,533,399 09	\$1,285,862 55	\$1,257,343 68

¹ Brought from last year. \$2,530 50² Transferred from the Reserved Fund, 27,700 00³ Balance of revenue from last year, 1,218 40⁴ Transferred from the Reserved Fund, 700 00⁵ Transferred from Incidental Expenses, 1,500 00⁵ Balance of revenue from last year. \$198 00⁶ Brought from last year, 19,930 99⁷ Brought from last year, 21,865 20

Transferred from the Reserved Fund, 4,400 00

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
<i>Brought forward</i>	\$2,533,399 09	\$1,285,862 55	\$1,257,343 68
Grammar School-house, Washing- ton Village :			
Building	120,000 00		120,000 00
Land	35,000 00		35,000 00
Grammar School-house, Winthrop District, Charlestown :			
Building	75,000 00		75,000 00
Land	50,000 00	44,158 00	5,842 00
Health Department	446,607 00	240,694 23	205,912 77
Highland street Stable	120,673 82	19,305 71	1,368 11
Holton Library Building, Brighton	18,096 50	14,815 47	3,281 03
Incidental Expenses	85,500 00	46,766 08	39,280 72
Add Income Trust Funds, \$546.80 }			
Inspection of Buildings	22,000 00	12,669 56	9,330 44
Interest and Premium	2,055,000 00	1,033,393 10	1,021,606 90
Lamps	455,500 00	232,912 48	222,587 52
Markets	11,195 00	5,795 40	5,399 60
Mount Hope Cemetery	426,311 74	27,503 92	10,215 14
Add Revenue rec'd, \$11,407.32 }			
Mystic Water Works		116,031 05	(\$16,497.81 prov'd for)
Add Revenue rec'd, \$99,533.24 }			
New Engine House, Brighton	3,000 00	2,516 06	483 94
Overseers of the Poor	101,825 00	46,374 69	55,450 31
Old Claims	1,500 00	308 10	1,191 90
Paving, etc.	1,300,000 00	884,074 84	415,925 16
Police	865,000 00	476,006 90	388,993 10
Police Station-house, Ward 16	43,983 63	25,262 06	18,721 57
Police Station-house, West Roxbury	14,310 50	14,278 67	31 83
Primary School-house, City Point	15,000 00		15,000 00
Primary School-house, Cottage Place, Roxbury :			
Building	50,000 00		50,000 00
Land	28,000 00		28,000 00
Primary School-houses, East Boston	18,539 56	18,535 68	3 88
Primary School-house, Gibson Dist. :			
Building	15,000 00	17 96	14,982 04
Land	6,000 00	6,000 00	
Primary School-house, Lawrence Dis- trict :			
Building	50,000 00		50,000 00
Land	25,000 00	21,855 75	3,144 25
Primary School-house, Quincy St.	50,000 00	3,070 26	46,929 74
Printing and Stationery	38,000 00	19,718 42	18,281 58
Public Baths	40,000 00	23,507 43	16,492 57
<i>Carried forward</i>	\$8,619,441 84	\$4,621,434 37	\$4,135,799 78

¹ Brought from last year, \$15,673 82
² Brought from last year, 3,096 50
³ Transferred to Contingent Funds Board
of Aldermen, 1,500 00
⁴ Bal. of revenue brought from last year, 2,811 74
Transferred from the Reserved Fund, 6,000 00

⁵ Brought from last year, \$38,983 63
⁶ Brought from last year, 9,310 50
⁷ Transferred from the Reserved Fund, 2,000 00
⁸ Brought from last year, 1,339 56
Transferred from the Reserved Fund, 5,200 00

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. unexpended.
<i>Brought forward</i>	\$8,619,441 84	\$4,621,434 37	\$4,135,799 78
Public Buildings	107,000 00	80,562 22	26,437 78
Public Institutions, viz.:			
House of Industry	210,000 00	131,028 16	78,971 84
House of Correction	110,000 00	66,584 29	43,415 71
Lunatic Hospital	65,000 00	38,034 49	26,965 51
Pauper Expenses	60,000 00	25,421 82	34,578 18
Steamboat "Henry Morrison" .	20,000 00	12,460 23	7,539 77
Office Expenses	9,000 00	4,523 73	4,476 27
New Laundry Building, Deer Island	15,000 00	11,360 23	3,639 77
Public Lands	6,000 00	3,840 08	2,159 92
Public Library	135,000 00	69,738 84	65,261 16
Public Library Building Improvem't	30,000 00	16,048 76	13,951 24
Quarantine Department	20,000 00	7,649 82	12,350 18
Registration of Voters and Election } Expenses }	20,000 00	7,408 72	12,591 28
Reserved Fund	250,100 00	20,000 00	230,100 00
Roxbury High School-house	30,000 00	16,786 49	13,213 51
Salaries	2104,900 00	57,694 52	47,205 48
Schools and School-houses, viz.:			
School Instructors	1,256,600 00	689,631 09	566,968 91
School expenses, School Committee	119,400 00	94,407 04	24,992 96
Salaries officers, School Committee	35,400 00	19,408 00	15,992 00
School-houses, Public Buildings	332,000 00	259,641 56	72,358 44
Sealers of Weights and Measures .	7,400 00	3,707 70	3,692 30
Sewers	300,000 00	143,613 98	156,386 02
Sheds, Health Department	10,000 00	2,529 18	7,470 82
Sinking Fund Commissioners	2,800 00	1,350 00	1,450 00
Surveyor's Department	59,000 00	32,770 13	26,229 87
Water Works	2757,500 00	475,118 55	282,381 45
Water Works, Interest and Premium	711,000 00	174,190 00	536,810 00
West Boston and Cragie's Bridges	4109,809 04	75,180 06	34,628 98
Widening Streets	300,000 00	118,613 79	181,386 21
Total Appropriations, \$13,645,143 00		\$7,280,737 85	\$6,669,405 34
Less transferred to		Less provided for	17,587 09
Water Works, W'ds			
13 to 16, and extension to Wards 17			\$6,651,818 25
and 19, ... 30,000 00			
\$13,615,143 00			
Balances from 1873-4, 197,207 88			
Add Revenue,	13,812,350 88		
	120,205 22		
	\$13,932,556 10		

¹ \$3,900 00 transf'd from Res'd Fund to Salaries.

5,200 00 " " Primary School-houses, East Boston.
6,000 00 " " Mount Hope Cemetery.
27,700 00 " " Bennett Grammar School-house, Brighton.
4,400 00 " " Grammar School-house, Ward 15.
700 00 " " Common, etc.
2,000 00 " " Primary School-house, Cottage Place, Roxbury.
20,000 00 " " Water Works, Wards 13 to 16, and Extension to Wards 17 and 19.

² Transferred to Water Works, Wards 13 to 16, and Extension to Wards 17 and 19, \$30,000 00.

³ Transferred from Reserved Fund, \$3,900.

⁴ Brought from last year, \$80,309 04.

SPECIAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans) . .	\$432,315 59	\$110,523 79	\$321,791 80
Atlantic Avenue (loans)	131,494 18	35,000 00	96,494 18
Beach Street (loans)	251,000 00		251,000 00
Broadway Bridge Foundations (loan)	110,295 00	15,691 55	94,603 45
Broadway Extension (loans)	80,680 21		80,680 21
Burnt District (loans)	1,641,647 83	651,778 68	989,869 20
Canton Street Grading (loan)	1,225 20	159 00	1,066 20
Devonshire Street Extension (loans)	21,931 80	175 74	21,756 06
Eastern Avenue and Bridge (loan)	92,163 57	35,297 59	56,955 98
Engine and Hook and Ladder House, Ward 5 (loans)	193,122 00	46,381 28	146,740 72
Engine House, Mason Street (transfer)	17,951 34	17,942 44	8 90
Fort Hill Improvement (loans)	5,537 55	2,836 28	2,701 27
Harrison Avenue Extension (loan)	80,477 35	66,362 90	14,114 45
Home for Poor, Deer Island (transfer)	45,960 47		45,960 47
Hook and Ladder House No. 4, (reserved fund) . .	150,000 00		150,000 00
Hose House, Longwood (loan)	5,557 31	5,535 98	21 33
Memorial Monument, Boston Common (transfer) . .	15,421 75	15,406 19	15 56
New Lunatic Hospital (loan and appropriation) . .	75,000 09		75,000 09
Northampton Street District (loan and transfer) . .	103,044 04	693 83	102,350 21
Oliver Street (revenue)	202,573 67	105,300 41	97,273 26
Parker Hill Reservoir (loan)	1,748 74	5,748 75	\$4,000.01 adv'd by Treasurer
Police Station House, South Boston (loan)	128,309 22	82,833 41	45,475 81
Primary School House, Newbury Street (loan) . . .	9,125 22	7,126 99	2,001 23
Rebuilding Hose House No. 5, (transfer)	40,000 00	500 00	39,500 00
Small-pox Hospital (loan)	10,000 00		10,000 00
Soldiers' Relief	35,987 96	6,744 32	29,243 64
Suffolk Street District (loans and transfer)	149,280 36	44,239 86	105,040 50
Ticknor Bequest (transfer)	16,819 11	672 26	16,146 85
Washington Street Extension (loan)	2,060 51		2,060 51
Water Street Grade Damages (transfer)	179,103 77	50,002 51	129,101 26
Water Works, Wards 13 to 16, and Extension to Wards 17 and 19 (loan and transfer)	15,546 17		15,546 17
Widening and Grading Dudley and other Streets (loan)	110,000 00	48,442 21	61,557 79
Widening Eliot Street (loan and transfer)	7,035 56	225 00	6,810 56
Widening Federal Street (loans)	13,458 99		13,458 99
Widening Hanover Street, No. 2 (loans)	1,103 03		1,103 03
Widening Warren Street (loan)	34,570 39		34,570 39
Widening Washington and Essex Streets (loan) . .	39,306 60	20,261 57	19,045 03
	77,472 99	4,384 96	73,088 03
Advanced by Treasurer	\$4,528,330 53	\$1,380,177 50	\$3,152,153 04
	4,000 01		
	\$4,532,330 54		

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General	\$13,932,556 10	\$7,280,737 85	\$6,651,818 25
Special	4,532,330 54	1,380,177 50	3,152,153 04
	\$18,464,886 64	\$8,660,915 35	\$9,803,971 29

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1874.

TOTAL APPROPRIATIONS AND EXPENDITURES FOR EACH.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the November draft.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (loans)	\$610,000 00	\$288,208 20	\$321,791 80
Atlantic Avenue (loans)	1,600,000 00	1,503,505 82	96,494 18
Bennett Grammar School-house, Brighton (appro'n)	56,200 00	39,324 18	16,875 82
Broadway Extension (loans)	1,000,000 00	919,319 79	80,680 21
Burnt District (loans)	6,671,176 65	5,681,307 45	989,869 20
Canton Street Grading (loan)	118,000 00	116,933 80	1,066 20
Columbus Avenue Extension (loans)	515,000 00	493,243 94	21,756 06
Devonshire Street Extension (loans)	610,000 00	553,044 02	56,955 98
Eastern Avenue and Bridge (loan)	200,000 00	53,259 23	146,740 72
Engine and Hook & Ladder House, Ward 5 (loans) .	65,000 00	64,991 10	8 90
Engine House, Mason Street (transfer)	15,000 00	12,298 73	2,701 27
Fort Hill Improvement (loans)	1,575,000 00	1,560,885 55	14,114 45
Grammar School-house, Dudley District (loan and appropriation)	140,000 00	139,993 60	6 40
Grammar School-house, Ward 15 (loan and appro'n)	134,400 00	131,342 11	3,057 89
Highland Street Stable (loan and appropriation) . .	90,000 00	88,631 89	1,368 11
Holton Library Building, Brighton (appropriation) .	29,500 00	26,218 97	3,281 03
Harrison Avenue Extension (loan)	220,000 00	174,039 63	45,960 47
Hook & Ladder House, No. 4 (transfers)	33,000 00	32,978 67	21 33
Hose House, Longwood (loan)	28,000 00	27,984 44	15 56
New Lunatic Hospital (loan and appropriation) . .	148,000 00	45,649 79	102,350 21
Northampton Street District (loan and transfer) . .	205,000 00	107,726 74	97,273 26
Oliver Street (loan and revenue)	188,862 79	358,643 92	169,781.13 ad. by Treas.
Police Station House, Ward 16 (loan and appropri'n)	45,000 00	26,278 43	18,721 57
Police Station House, West Roxbury (appropriation)	22,426 00	22,394 17	31 83
Primary School-houses, East Boston (loan and appro.)	97,200 00	97,196 12	3 88
Parker Hill Reservoir (loan)	161,000 00	115,524 19	45,475 81
Police Station House, South Boston (loan)	45,000 00	42,998 77	2,001 23
Suffolk Street District (loan and transfer)	2,391,248 96	2,375,102 11	16,146 85
Washington Street Extension (loan)	1,760,000 00	1,630,898 74	129,101 26
Water Street Grade Damages (transfer)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley & other Streets (loans)	180,000 00	173,189 44	6,810 56
Widening Eliot Street (loan and transfer)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Hanover Street, No. 2 (loan)	803,623 58	769,053 19	34,570 39
Widening Warren Street (loan)	115,000 00	95,954 97	19,045 03
Widening Washington and Essex Streets (loan) . .	250,000 00	176,911 97	73,088 03
Amount advanced by Treasurer	\$20,937,637 98 169,781 13	\$18,729,925 43	\$2,377,493 68
	\$21,107,419 11		

City Document. — No. 96.

CITY OF BOSTON.



EXECUTIVE COMMUNICATION

COVERING

A Statement from the Medical Commission,

ON THE SUBJECT OF THE

SANITARY QUALITIES

OF THE

SHAWSHINE, CHARLES, SUDBURY, AND
MYSTIC RIVER WATERS.

CITY OF BOSTON.

IN COMMON COUNCIL, Nov. 5, 1874.

Read, and ordered to be printed, and sent up.

Attest :

W. P. GREGG,
Clerk of the Common Council.

CITY OF BOSTON.

MAYOR'S OFFICE,
BOSTON, November 5th, 1874.

To the Honorable the City Council:—

GENTLEMEN, — I have the honor to transmit herewith a brief statement of the results of the investigations which have been made by the medical commission appointed under an order of the City Council, passed June 16, 1874.

The statement is furnished, at my request, in advance of the full report, in order that you may have all the information necessary to a correct understanding of the important question now awaiting your action.

SAMUEL C. COBB, *Mayor*.

To His Honor SAMUEL C. COBB, Mayor of Boston:—

SIR, — In compliance with your request we have the honor to submit the following statement of the results to which our investigations have led us, referring to our forthcoming report for full details of the reasons upon which these conclusions are based.

We are of the opinion that of the four rivers under consideration the Shawshine will probably furnish the purest and most wholesome water for the supply of the City of Boston.

Somewhat inferior to the Shawshine, but still capable of furnishing water of a good quality for domestic purposes, are the Charles and Sudbury rivers. In estimating the com-

parative desirability of these two rivers, we assume that all sewage and manufacturing refuse of a deleterious nature can be prevented from directly entering the rivers, these being the most important sources of contamination of river-water. On this assumption the density of the population in the two drainage areas, and its probable future increase, are the two principal points to be considered.

In this respect the Charles river is on the whole preferable to the Sudbury. The latter river has, however, according to the proposed plan, somewhat better storage facilities ; but we are of the opinion that this advantage is not to be regarded as outweighing the disadvantages arising from greater density of population.

We have based these considerations on the supposition that, if the Charles river be adopted as the source of supply, the water will be taken directly from the storage basin above South Natick ; for if it be allowed to flow through the river-bed to Newton Upper Falls it will necessarily become more or less contaminated with the sewage of the towns of South Natick, Dover, Dedham, West Roxbury and Needham, as well as with vegetable impurities derived from the extensive meadows in the neighborhood of Dedham, thus involving a partial loss of the benefits derived from storage in the large basin.

The Mystic river, owing to obvious sources of pollution, is, in our opinion, much less desirable than the other rivers as a source of water-supply for the city.

Respectfully,

CHAS. W. SWAN.
H. P. BOWDITCH,
EDW. S. WOOD.

BOSTON, Nov. 5, 1874.

City Document.—No. 97.

CITY OF BOSTON.



REPORT OF THE COMMITTEE ON SETTLEMENTS

ON THE
NEW ACT, 1874, C. 274,

CREATING SETTLEMENTS BY FIVE YEARS' RESIDENCE.

CITY OF BOSTON.

The act passed at the last session of the Legislature, 1874, chapter 274, largely extended the privilege of settlement, establishing a more liberal principle and policy in dealing with the poor. As then anticipated, questions have already arisen as to its true interpretation; and this Board, with a natural solicitude not to withhold relief from any one legally entitled, have referred the subject to our committee.

Laws of relief are necessarily complicate, and in framing or amending them there are many considerations which cannot with safety be overlooked. Much mischief may result to the community and the recipients, by injudicious aid; it is so obviously unjust to tax the industrious and prudent for the support of the idle and improvident; public order may be so easily imperilled by allowing the lawless and violent a claim to support from the public treasury which they do not earn for themselves, that the Legislature, although often earnestly urged, long steadily refused to change a system resting on approved principles, which for many generations had been established, interpreted by many judicial decisions, and become in its practical operation familiar to those upon whom its administration devolved. It seemed less necessary to change it, that private charity variously organized supplied what was defective, and protected the poor not coming within its provisions, from actual want.

The latter class, by immigration from abroad, and the restless and shiftless character of the least fortunate amongst our own people, at last, however, became so numerous that the old

law, though largely supplemented by military settlements and State aid for soldiers in the late war and their families, failed to provide for many deserving cases of helplessness and destitution, and private charity was too fitful and precarious, and its organizations too inadequately sustained, to be always depended upon. That instances of dire distress and actual starvation should even be thought possible in communities opulent and generous, and so sensitive to their Christian obligations as our own, gave just reason for discontent. It quickened the zeal of the benevolent into active appeals to the authorities and Legislature, which at last commanded attention. After a hearing upon a petition referred to this board by the City Council, it was proposed to extend the right of settlement to all single women who had resided ten years in any city, or town, without having received pauper relief. If this recommendation to the Legislature had been adopted, it would have relieved a large proportion of the most urgent cases unentitled as the law stood. But an amendment to the bill of the committee, embodying this change, limiting its application to periods of residence subsequent to its passage, rendered the act of 1870, chap. 392, of no effect till 1880, and entirely defeated the object, which was to relieve existing distress.

Dissatisfaction with this denial of relief, which could not be given, under our instructions from our duly constituted legal adviser, without violation of law, steadily increased, till last winter the Committee on Charitable Institutions, after repeated hearings on petitions numerously signed, reported a bill which, after certain amendments, was enacted as follows:—

[1874. CHAP. 274.]

AN ACT for the more efficient relief of the poor.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:—

SECTION 1. Any person of the age of twenty-one years who resides in any place within this State for five years together, and pays all State, county, city or town taxes duly assessed on his poll or estate for any three years within that time, shall thereby gain a settlement in such place.

SECT. 2. Any woman of the age of twenty-one years who resides in any place within this State for five years together, without receiving relief as a pauper, shall thereby gain a settlement in such place. The first section of the three hundred and ninety-second chapter of the Acts of eighteen hundred and seventy is hereby repealed.

SECT. 3. No existing settlement shall be changed by any provision of this act, unless the entire residence and taxation herein required accrues after its passage; but any unsettled person shall be deemed to have gained a settlement upon the completion of the residence and taxation herein required, though a whole or part of the same accrues before the passage of this act.

SECT. 4. The provisions of this act shall not apply to any person, who, at the date of its passage, is an inmate of either of the State lunatic hospitals, the asylum for the insane of the State almshouse at Tewksbury, the State workhouse, or the State primary school, until such person has been duly discharged from said institution.

[Approved May 28, 1874.]

Applicants for relief are more numerous in the winter months; but already there have been many claimants under

the new law. Doubts arising as to who were entitled to its benefits, the City Solicitor was consulted, whose replies to the questions propounded are annexed as a convenient guide for our government until the law shall be changed, or its provisions submitted to the arbitrament of the tribunals.

Other overseers in the State, equally at a loss for the rightful construction of the statute, applied to the Attorney General for counsel; and his opinion is also appended, and with it another subsequently obtained from the City Solicitor. It is not an easy process to obtain judicial interpretation of controverted points, as they are not likely to become subjects of litigation, such litigation rarely occurring unless between towns in cases of disputed settlement. As it would be a great hardship on the poor entitled to relief to be debarred, the course that commends itself to the committee is to give them the benefit of the doubt for the present, and suggest the expediency of an explanatory act at the coming session of the Legislature.

To illustrate the embarrassments already experienced, we shall make clear the class of cases in which now exists a difference of construction by stating those nearly similar, in which there is none. Both the City Solicitor and Attorney General concur in the opinion, that women having no settlement anywhere else, of full age, living five years continuously in any city, or town, without receiving pauper relief, have thereby gained a settlement, provided they were single at the time of application. It is not material, of course, whether they had been in the state of matrimony before the application, so long as they were single women, or widows, then. The old law being unrepealed and in force where not superseded, and the new governed by the usual analogies, settlements thus acquired descend to children under age at the time of the settlement vesting, or who may be born at any time afterwards. The new act also provides that no settlement already acquired shall be changed but by five years' residence as

above, after its passage. It cannot, therefore, affect derivative settlements from former generations, or those acquired by the present, until after five years have expired from its date. It extends a settlement to every person unsettled at the passage of the law, who at any time for five years, after full age, may have resided in any city, or town, without receiving relief, and having paid, if men, for any three years within that time, all state, county, city or town taxes assessed on his poll or estate. Its operation at once commences upon all who may dwell in other places than where they have their settlement, and after five years' residence and compliance with the other conditions their settlement will be changed to this new place of abode.

But where the applicant is a wife, there exists some difference of opinion as to whether it shall be allowed. By the old law, not repealed, it is expressly provided that the settlement of the wife shall follow and be governed by that of her husband. If he had a settlement, that of course determines hers; and this is understood to be the opinion of the Solicitor and Attorney General. If not, the question is, can she be gaining one and actually perfect it during his lifetime? But for decisions interpreting the old law, the explicit terms of the new would support the inference that she might. Yet, if her settlement is to follow and be governed by his, the opposite conclusion seems better supported by the precedents.

It seems reasonable that persons, to acquire this favored heirloom of immunity from want in all their generations, should render for it some equivalent. If the husband is industrious, supports his family so that they receive no aid from the public, and duly pays his taxes, all the family gain a common settlement—the wife and children through his. To allow them to obtain theirs independently of his takes from him one powerful motive to contribute his share to the public burdens. It would also tend to another evil. Our

monthly rolls exhibit an increasing number of deserted wives, young women, with large families of children, left by their husbands upon the public treasury for support. Relying on public or private benevolence for relief, in case they come to want, they yield to temptation and expend their earnings improvidently. When their means are exhausted, the husband and father discovers an excuse for going away in the plea that they will be more kindly cared for, be actually better off if relieved at the public charge. It is a cardinal point of all pauper legislation that no one shall receive aid from the public who can support himself; and equally sound doctrine and one to be encouraged, that every man shall, according to his means and opportunities, support his wife and children, and that they shall not become a burden to the public so long as he or they can earn their bread. It is not good policy to weaken this sense of obligation by giving women a right to relief independent of their husbands, who, if industrious, by paying taxes can gain a settlement for both.

It is urged that the intent of the Legislature, to be gathered from the debate and the record whilst the bill was under consideration, should govern the construction of the act. The argument, that if a shiftless or vicious husband would not by steady courses and paying taxes gain a settlement, his family should not suffer for his fault, was pressed. But whether the word "unmarried" in the act of 1870 was omitted with this view in that now passed, is, of course, merely matter of conjecture. However this may be determined, it is well to remember that under the interpretation of their legal adviser, the Board of State Charities, governed by the statute 1866, chapter 234, reimburse a proportionate part of the relief extended to the family, where the wife has a settlement and her husband has not, to him as local relief, as they cannot be legally separated. As the law stood, where she having a settlement he acquired one, hers merged in his, as

also those of their children, and this is presumed to be the case still. Where a widow with children remarries, her settlement follows that of her new husband, the children retaining that of their own father, if he had one; if not, that which she had, if any, before the second marriage.

Having stated the reasons why the opinion of the City Solicitor seems to us the most eligible on the ground of policy, we think the doubts that at present perplex us should be early reconciled. Adjudication of derivative settlements as the law stands must constantly grow more embarrassing, as it becomes more difficult to determine from which parent children inherit. It may seem premature to anticipate the questions before they occur. Yet, after rights are once vested, and numerous classes and individuals are already dependent for full or partial support upon rules of law long enough established to create precedents, and many poor persons are actually receiving relief which it would be greater cruelty to discontinue than to have originally denied, changes will be less practicable than now. Settlements under the old law are vested rights sacred by long possession, and cannot be disturbed. But the new law is on its trial, still experimental, and may well be modified before what is impolitic or injudicious has gained any such hold, or created rights not easy to take away. The principal cases for doubt are those above stated: wives who have resided five years in one city or town in the State, but whose husbands are living and have no settlement; but others may arise.

By law a settlement acquired cannot be lost until another is gained somewhere else in the State, and under it all descendants, however remote, become entitled to support or relief when falling into distress. Even where their intermediate ancestors for several degrees have never come within our borders, they are entitled to its benefits, though they come for the purpose. So many of our people, in order to better their condition, emigrate to the West, and multiply, that the

State may before long become bound to support many times its population. It is not very likely that inconvenience will be felt from this source; but as it is estimated that in five years half a million of persons within our limits will be added to such as at present, in case of need and inability or indisposition to work, are entitled to be clothed and fed at public expense, it may be well not to extend this indefinite expansion to five years' settlement. Whilst blest as now, and with a people thrifty and industrious, we can well meet all such obligations; but as we have to discriminate in favor of our own better poor, and the relief extended at their homes is wholly inadequate to their reasonable needs, whilst we would not advocate an ungenerous policy, it is best not to hold out undue inducements to the physically or mentally weak, unable to earn their own livelihood, to come into Massachusetts.

This privilege of settlement—a valuable birthright for all who may need its protection from suffering and destitution—ought not to be carelessly bestowed upon persons wholly unentitled to the privilege, at the expense of our own citizens. If a stranger from abroad or other part of the country comes into Massachusetts, and remains five years, paying taxes to the requisite number and amount to gain a settlement, and then removes and settles permanently in another State or land, it seems uncalled-for liberality to assume the obligation of supporting any of his descendants generations afterwards who may in their poverty be attracted here, because our practice and policy of relief are more liberal than those anywhere else. It would seem sufficiently generous to provide that where five years' residence creates the settlement, five years' absence from the State, or from the place to be charged, certainly where the domicile is changed, should divest it. It would seem also reasonable that no new settlement should be allowed unless such five years' residence be since, for instance, 1860, or as a rule for

the future, within twenty years of the application for relief. Such five years' settlements might be confined to the individuals acquiring them, and their minor children. It might also be well that greater latitude were allowed for the period of paying taxes. These taxes are not more than should be required, but a longer period might be specified during which they may be paid. It should be made clear in the statute that the burden of proving residence should be on the applicant, and the amount and nature of relief left wholly discretionary with the overseers. It is so of course now, but the explicit statement to that effect will remove in some cases an erroneous impression not always easily set right.

Should the law be revised, it may be well to remember that one condition of gaining a settlement alike under the old law and the new is, that during the specified period of continuous residence relief must not be received. Under decisions of the Supreme Court, if a wife receives such aid with the knowledge of the husband, his compliance with the other provisions of the law will not avail him in acquiring a settlement. As the State only gives relief outside of the State almshouse to persons too ill to be removed to it without prejudice to health, a large number of those most likely to suffer from want will have disqualified themselves from acquiring any other claim than temporary aid under the law from having received it within the five years of continuous residence. Such aid is authorized under the third class of relief authorized by the General Statutes. The most distressing cases of want are therefore likely to occur among the poor, whom the provisions of the new law do not reach. Either the Legislature should appropriate to reimburse cities and towns for aid to State paupers not too ill to be removed, or enlarge the discretion of overseers in extending temporary aid. If such aid is to defeat a settlement partially gained, it had better be withheld.

The whole number of applicants (July to January) who

have gained their settlements, under the new law, is about five hundred, mostly women, claiming by virtue of residence ; twenty-one, men, by residence and payment of three years' tax. Besides these are several with settlement in other cities and towns, who have been relieved and notice given. Fifty-seven women, who have resided here five years, but who have husbands living without any settlement, have been considered as State cases. These cases are covered by the statute, in the opinion of the Attorney General, excluded by that of our own legal adviser, on the ground that a married woman cannot gain a settlement independent of her husband during the coverture.

Conversant as the committee of the Legislature, who reported the late bill, were with the system of relief, the effect of their law was hardly to be foreseen. It has hardly yet been tested ; but there are several hundred overseers in the State, besides ourselves, who are watching its operation. Amendments, suited to the different characters of their communities, will be suggested, and some no doubt adopted. It is quite probable that, upon further examination, others than those enumerated would have suggested themselves to us. It is to be hoped that the Legislature, after giving the whole subject, for a few years, their thorough consideration, and settled upon a policy as humane, adequate and economical as our changed condition demands, will resume its conservative position for a protracted period, inasmuch as very frequent changes are to be deprecated.

In case of revision it may be well to remember that soldiers enlisted into our regiments out of the State during the war were often credited to the State quota, but not to any city or town. Many of them came here with their regiments to be disbanded and took up their abode, but not being resident within any city or town when enlisted there is no provision by law for their relief except in the State almshouse. If aid were authorized when they fall into distress to be

reimbursed by the State, and without defeating a settlement partially gained, many meritorious cases could be relieved. It is also worthy of consideration whether in case of annexation the residence required, if within the new limits, and payment of the taxes prescribed to either of the merged municipalities, should not vest a settlement.

If this Board had some control over the in-door accommodation for the poor, they could more effectually care for those relieved outside. The in-door and out-door poor ought to be under the same supervision, and the circumstances that, in 1823, led to placing the almshouse under other charge than that of the overseers, being greatly modified by the increase of population, and changes of our penal and reformatory laws, the time would appear to have arrived for considering the propriety of restoring the innocent and helpless poor again to their care. The buildings now so used, or applicable for the purpose, belonging to the city, with such added at little cost as its growth may demand, will probably be sufficient for many years. With due deference, we venture to express the opinion that this Board, familiar as they become with the poor who, for their own comfort and the good of the community, should be in an institution rather than in such homes as precarious relief from charity provides, will take as good care of them, and as economically, as any other. It is, moreover, due, not only to the destitute, but, on many accounts, to the best interests of the community, to discriminate between vice and poverty more than is in all cases easily practicable when both are under the same administration.

As Boston pays nearly half the State taxes and has generally furnished but one-third of the State paupers, the extension of settlement under the late law would work no prejudice to her financially, provided the policy adopted by the city and State were the same. But whilst the State withholds out-door relief except to the destitute too ill to be removed to Tewksbury, the new law subjects the city to a larger charge for

the support of the poor than before its passage. How much greater will depend, in some measure, upon the prudence with which relief is extended. Knowledge of the change has already led to appeals for aid from persons who before contrived to subsist tolerably well without it. Many now claim assistance from the overseers who have hitherto depended on private charity or the charitable organizations. The resources thus relieved of a portion of the claims upon them, if judiciously dispensed, will of course be more adequate to aid such as still remain without settlement in consequence of having received public relief, or to supplement the public aid to such as have gained one. The act imposes still heavier responsibilities on almoners, both of public and private charity, to alleviate distress without creating pauperism; to discriminate between the deserving poor who will not be encouraged thereby to sloth, and impostors. If it encourage dependence in such as by well-directed efforts can maintain themselves; if it deprive poverty of one redeeming blessing that attends it in stimulating to increased endeavor to find work and deserve it by quickening faculty and correcting fault; if it lessen the sense of the obligation incumbent on every individual to support himself and family, parents as well as children, as prescribed by law, or that healthy reluctance to become dependent on public relief now extensively prevailing wherever education or pride of character has developed right sentiments, — the help given to remove temporary need becomes fraught with permanent evil. It ceases to be charity. On the contrary, it demoralizes, and by deadening every noble incentive dooms its victims to helpless and hereditary pauperism. These are, perhaps, too familiar truths to need repetition, but they are difficult always to bear in mind, when destitution is to be relieved. They should never stay or stint where want is pressing, but in every case, by counsel or encouragement or active aid in finding employment, should be improved to prevent the likelihood of its recurrence.

The increased number of families and individuals claiming aid under the late act, or in consequence of the recent accessions to our population by annexation and natural growth, create new needs, and should suggest new methods of dealing with the poor than those in use. The throng of applicants has overtaken the force employed in the office of the overseers, and delay in giving relief occasioned complaint. This, of course, will soon be remedied, and by placing on pensions and grants for regular stipends, or even on the trusts, cases in their character chronic, those left for occasional aid will be more manageable. Economy in our pay-roll has been the constant aim of the Board, but may be carried too far if the visitors employed are not sufficient to carry out our plan of registration, or have not time to ascertain the merits of each case. Much is given to the undeserving which had better be withheld, and the most importunate are frequently those who have the least claim. Many are in want because they choose to be idle, self-indulgent, or spend heedlessly their earnings when they have employment, without making any provision for age, infirmity, or dull times.

It may seem harsh to say it, but more frequent recourse to the vagrant law for discouraging indolence, improvidence and mendicancy, and relegation of the incorrigible for a time under sentence of court to the island, may be necessary to protect the industrious tax-payer, and also prove in the end the kindest treatment for such as by bad habits are gradually degenerating into tramps and beggars. This class of public charges requiring discipline should be put in the way when on the island of acquiring habits of industry and proficiency in some useful art whereby to gain their livelihood when released. Among the most difficult to deal with is the class already referred to, where fathers and husbands desert their families, leaving them a public charge. Some check should be devised for this growing evil.

A statute will be found in the sequel whereby cities and towns are empowered to provide suitable asylums for

neglected and orphan children, and by the wise benevolence of Mr. Boylston we possess an accumulating fund for this very purpose. If, in connection with such an institution as the founder designed, such provision could be made for their training in such trades as they elect or are best fitted for, when their period of pupilage is past they would enter into life with assurance of honorable employment which would prevent them ever becoming chargeable to the public. We have now many asylums for children of different ages and conditions, but the rapid growth of our population creates a constant demand for more. As others are added public and private classification becomes more practicable, and with this growing disposition towards co-operation in those that manage them, many improvements may be introduced, and both in economy and efficiency our charities, public and private, keep pace with our growing enlightenment. It must be borne in mind, both by ourselves and the public, that institutions or expenditures adequate for one hundred thousand inhabitants will not suffice for thrice as many, and that in making provision for the larger number now thrown upon the city for support, we should not be contented with established modes when better can be substituted.

As the new act and its proper interpretation, with the whole subject, was referred to our committee, we have improved the indulgence allowed us of reporting in print to allude to the increased responsibility the statute entails. Attached to the report are the opinions to which reference has been made, as also certain statutes bearing more or less directly upon our new duties. They have been passed subsequently to the date of our manual, and it is convenient to have them collected and available for consultation.

THOMAS C. AMORY,
THOMAS F. TEMPLE,
ISAAC T. CAMPBELL,
LIVERUS HULL,

Committee on Settlements.

OPINIONS AND LAWS REFERRED TO IN THE FOREGOING REPORT.

CITY SOLICITOR'S OFFICE, BOSTON, August 19, 1874.

SIR :— It is clear, it seems to me, that by the provisions of chapter 274 of the Acts of 1874, persons may acquire a settlement in any place, so as to be entitled to support as paupers therein, in case of need, by a residence in such place five consecutive years, and the payment of all taxes assessed upon them for any three of the said years. In the case of a person already having a settlement in any place in this Commonwealth, such residence and payment of taxes must all be subsequent to the enactment of the said statute ; but in the case of a person not having a settlement in the Commonwealth, such residence and payment of taxes may be either in whole or in part before the enactment of the statute as well as subsequent thereto.

In regard to the construction of the second section of the said statute there may well be doubt whether the section applies to married women or only to unmarried women. It is not to be presumed, unless the language of the act does not allow a different construction, that the Legislature intended to provide that a husband and wife living together in a place for five years, the husband paying taxes for only two of the five years, the wife should thereby gain a settlement in that place, and the husband should not gain one ; so that if they need to be supported at the public expense, they must be separated, and reside in, and draw their support from different places. And as this statute does not repeal any of the provisions of the General Statutes, except in so far as it is inconsistent therewith, I incline to the opinion

that the provision of the General Statutes, that a married woman shall have the settlement of her husband, is still in force.

I therefore think that the prudent course for the Overseers for the Poor to take, until there is some decisive authority to the contrary, is to regard married women as not capable of obtaining a settlement under the act of 1874, except with or through their husbands.

With great respect,

J. P. HEALY.

HON. THOMAS C. AMORY.

Boston, August 21, 1874.

HON. JOHN P. HEALY, *City Solicitor*: —

1. SIR: Does the word "before," in the last line of the third section of chapter 274, of the Acts of 1874, refer simply to the five years preceding the passage of the act, or to any five years previous to the passage, and since 1794?

2. Does a married woman having a settlement under the old law through her father, but whose husband, previously unsettled, has a settlement under the present act, retain her old settlement in accordance with the following from section 3, — "no existing settlement shall be changed"?

3. Does the third section apply to simple residence as well as to residence and taxation?

4. Must a widow be a widow five full years in order to gain a settlement, or if a widow when she applies for aid, will five years' residence, during a part of which she was a married woman, have the same effect? If she had lived single five years before marriage, would that give her a settlement after the death of her husband?

In behalf of the Overseers of the Poor,

BENJAMIN PETTEE,

Secretary pro tem.

ANSWERS TO THE FOREGOING QUESTIONS.

1. Any five years of residence and payment of the taxes required, whenever had, gains a settlement for any unsettled person.

2. When a new settlement is gained, any former settlement is thereby abrogated. The married woman, in the case put, will therefore have the settlement of her husband, and not that of her father.

3. Yes.

4. In determining whether a widow has gained a settlement by a residence of five years, I think that it is immaterial whether or not she was married during some portion of the five years required; that the whole time of her residence, both during her marriage and widowhood, is to be computed. If she had gained a settlement while she was unmarried, she would retain that settlement until she gained another. If her husband had a settlement at the time of the marriage, or gained one afterwards, she would take his settlement, and thereby lose her own. If the husband had no settlement, she would retain the one gained in her own right.

J. P. HEALY,
City Solicitor.

August 22, 1874.

CITY SOLICITOR'S OFFICE, BOSTON, Oct. 19, 1874.

SIR: The questions which you propose to me seem to be answered in my communication to you of the 19th of August last.

In my opinion, the provision of the General Statutes, chap. 69, sect. 1, that "a married woman shall follow and have the settlement of her husband, if he has any within the State," is unrepealed and in full force; and that while the husband has a settlement within this State, the wife takes

that settlement, and cannot gain another under the acts of the year 1874, chap. 274.

In the case of a husband and wife living together in this State five years, and neither having a settlement therein, and the husband failing to pay taxes for three years during that period, whether the wife gains a settlement, while the husband fails to find one, is a matter of doubt in my mind. It seems to me prudent and reasonable not to allow a claim for support by such a wife, until the statute of 1874 shall have been judicially interpreted to include such cases.

Very respectfully,

J. P. HEALY.

HON. THOMAS C. AMORY.

The Board of State Charities asked the Attorney General of the Commonwealth for an interpretation of the first clause of the second section of this law. His response was as follows :—

ATTORNEY GENERAL'S OFFICE,

BOSTON, September 19, 1874.

To the Board of State Charities:—

Prior to Acts of 1870, chapter 392, an unmarried woman could obtain a settlement only under the provisions of the General Statutes, chapter 69. By the Act of 1870, "any unmarried woman" obtained a settlement by a residence of ten years together, in any place, under certain conditions. By chapter 274, section 2, of the Acts of 1874, section 1 of chapter 392, Acts of 1870, is repealed, and a new provision substituted. The substitute changes the law of 1870 in three particulars; the effect of one only is material for me to consider under the question submitted by your Board for my opinion. In the Act of 1874, the word "unmarried" is omitted. The plain and obvious intention of the Legislature by this change of the law is to so arrange the law of settlement as that women shall have the same rights irrespective of any condi-

tion of marriage. The language of the Act, taken in connection with the Act repealed, does not allow of any other construction, and the intention of the Legislature, if it can be ascertained, is to govern. In the present instance, the omission of the word "unmarried," and the use of the word "woman" only, makes it appear manifestly to have been the intention of the Legislature to use the word "woman" in the Act, so as not to be affected or modified by the condition of marriage; and in my opinion no other construction can be given the Act. The intention of the Legislature being manifest, no consideration of presumption can arise.

Yours very respectfully,

CHARLES R. TRAIN.

Where overseers cannot accurately state how many have gained settlements under this law, the Board wishes a careful and well-considered estimate of the number.

[1865. CHAP. 230.]

AN ACT relating to the Settlement and Relief of Persons who have served in the Army and Navy of the United States.

Be it enacted, etc., as follows: —

SECTION 1. Any person who shall have been duly enlisted and mustered into the military or naval service of the United States, as a part of the quota of any city, or town, in this Commonwealth, under any call of the President of the United States, during the recent civil war, and who shall have continued in such service for a term not less than one year, or who shall have died or become disabled from wounds or disease received or contracted while engaged in such service, or while a prisoner in the hands of the enemy, and the wife, or widow, and minor children of such person, shall be

deemed thereby to have acquired a settlement in such city, or town; and all the rights, duties and liabilities pertaining to such settlement, as set forth in chapters sixty-nine and seventy, and in section forty-nine of chapter seventy-one of the General Statutes, shall attach thereto: provided, such person was, at the time of his enlistment, of the age of twenty-one years, an inhabitant of said city, or town, and had resided therein for six months next previous to the time of his being mustered into such service.

SECT. 2. Any person enlisted, mustered and serving as a part of the quota of any city, or town, as set forth in the first section of this act, but who shall not be entitled to a settlement therein by reason of the want of age or residence required by said section, shall, nevertheless, be entitled for himself, his wife, or widow, and minor children, to relief and support in such city or town, if at any time they should fall into distress therein, or stand in need of such relief or support; and such city, or town, shall not send such person, nor his wife or widow, nor his minor children, to any State almshouse, nor remove them to any other place, nor recover the expenses of their relief, or support, from any other city, or town, nor receive the same from the Commonwealth; and if any city or town shall cause any such person so entitled to relief therein to be sent to any State almshouse, or removed to any other place, such city or town shall be liable, in an action of tort, for all expenses of their relief and support thereafter incurred in such almshouse, or by any other city, or town.

But, otherwise than as above provided, said city, or town, shall not be liable to any other city, or town, nor to the Commonwealth, for the expenses of any relief or support furnished to such person, or to his wife, widow, or minor children, in such other place, or in any State almshouse.

SECT. 3. The provisions of this act shall not apply to any person who shall have enlisted and received a bounty for such

enlistment in more than one town, unless the second enlistment was made after an honorable discharge from the first term of service, nor to any person who shall have been guilty of wilful desertion, or who shall have left the service otherwise than by reason of disability or an honorable discharge.

[Approved May 13, 1865.]

[1866. CHAP. 288.]

AN ACT to define chapter two hundred and thirty of the Acts of the year eighteen hundred and sixty-five, relative to the Law of Settlement.

Be it enacted, etc., as follows:—

SECTION 1. Section one of chapter two hundred and thirty of the Acts of eighteen hundred and sixty-five shall not be construed to require a continuous service of one year.

SECT. 2. This act shall take effect upon its passage.

[Approved May 29, 1866.]

[1867. CHAP. 328.]

AN ACT in relation to the Settlement of Paupers.

Be it enacted, etc., as follows:—

SECTION 1. Hereafter, any person of the age of twenty-one years, having the other qualifications mentioned in the fourth, fifth, ninth and twelfth clauses of the first section of chapter sixty-nine of the General Statutes, shall be deemed to have thereby gained a settlement as therein provided, although not a citizen of this or any other of the United States.

SECT. 2. If any person, actually become chargeable as a

pauper to any city or town in which he has a settlement, has a settlement subsequently acquired in any place without this Commonwealth, the overseers of the poor of such city or town may cause him to be removed to said place of subsequent settlement, by a written order directed to any person therein designated, who may execute the same.

SECT. 3. Section one of chapter two hundred and thirty of the Acts of the year eighteen hundred and sixty-five, is hereby amended, by striking from the end thereof the words, "and had resided therein for six months next previous to the time of his being mustered into said service," and by inserting the word "and" before the words "an inhabitant" in the last clause left remaining in said section.

[Approved June 9, 1868.]

[1870. CHAP. 392.]

AN ACT concerning the Settlement of Paupers.

Be it enacted, etc., as follows:—

SECTION 1. Any unmarried woman, of the age of twenty-one years, who shall hereafter reside in any place within this State for ten years together, without receiving relief as a pauper or being convicted of a crime, shall thereby gain a settlement in such place.

SECT. 2. All settlements acquired by virtue of any provision of law in force prior to the eleventh day of February, in the year one thousand seven hundred and ninety-four, except where the existence of such settlement prevented a subsequent acquisition, are hereby declared defeated and lost.

SECT. 3. Any person who shall have been duly enlisted and mustered into the military or naval service of the

United States, as a part of the quota of any city or town in this Commonwealth, under any call of the President of the United States, during the recent civil war, and who shall have continued in such service for a term not less than one year, or who shall have died or become disabled from wounds or disease received or contracted while engaged in such service, or while a prisoner in the hands of the enemy, and the wife or widow and minor children of such person, shall be deemed thereby to have acquired a settlement in such city or town.

SECT. 4. The provisions of the preceding section shall not apply to any person who shall have enlisted and received a bounty for such enlistment in more than one town, unless the second enlistment was made after an honorable discharge from the first term of service, nor to any person who shall have been proved guilty of wilful desertion, or to have left the service otherwise than by reason of disability or an honorable discharge.

SECT. 5. Any person who would otherwise be entitled to a settlement under section three of this act, but who was not a part of the quota of any city or town, shall, if he served as a part of the quota of this Commonwealth, be deemed to have acquired a settlement in the city or town where he actually resided at the time of his enlistment.

SECT. 6. Chapter two hundred and thirty of the Acts of the year eighteen hundred and sixty-five, and section three of chapter three hundred and twenty-eight of the Acts of the year eighteen hundred and sixty-eight, are hereby repealed, saving all acts done and all proceedings commenced under the same.

[Approved June 22, 1870.]

[1869. CHAP. 258.]

AN ACT in addition to an act establishing the State Work-House at Bridgewater.

Be it enacted, etc., as follows:—

SECTION 1. Upon complaint of the overseers of the poor of any city or town, trial justices and justices of the police and municipal courts may, in their discretion, commit persons convicted before them of any of the offences enumerated in sections twenty-eight and thirty-five of chapter one hundred and sixty-five of the General Statutes, to the State work-house at Bridgewater, for a term not less than three months, nor more than two years, there to be governed and subject to the same liabilities as persons sentenced under the provisions of chapter one hundred and ninety-eight of the acts of the year eighteen hundred and sixty-six; or such offenders may be sentenced as now provided by law.

SECT. 2. The Board of State Charities shall have the same power to apprentice or discharge any person so committed, as is now vested in overseers of houses of correction; and they may cause any such person, not having a legal settlement within this Commonwealth, to be removed to the State or place where he belongs, or whence he came, in accordance with existing laws. But if any person so removed shall return to this State before the expiration of his term of sentence, he shall be liable to be rearrested and returned to the State work-house, there to serve out the remainder of said term.

SECT. 3. If any person so committed shall have a legal settlement in any city or town in this Commonwealth, the said city or town shall pay for his support such sum per week as may be fixed upon by the said board, reference

being had to his capacity for labor ; and all moneys so received shall be paid into the treasury in the manner now provided by law ; provided, however, that upon the written request of said overseers, the Board of State Charities shall permit him to be transferred to the work-house of his place of settlement, where he shall serve out the remainder of his sentence.

[Approved May 10, 1869.]

[1871. CHAP. 379.]

AN ACT concerning the Settlement of Paupers.

Be it enacted, etc., as follows :—

SECTION 1. Chapter three hundred and twenty-eight of the acts of eighteen hundred and sixty-eight is hereby amended in the first section by adding thereto the words, "whether such other qualifications shall have been acquired before or after the enactment hereof."

SECT. 2. Chapter three hundred and ninety-two of the acts of eighteen hundred and seventy is hereby amended in the third section by adding after the words, "civil war," "or duly assigned as a part of the quota thereof after having been enlisted and mustered into such service."

SECT. 3. Wherever a settlement acquired by marriage has been defeated by virtue of the provisions of the second section of chapter three hundred and ninety-two of the Acts of the year eighteen hundred and seventy, the former settlement of the wife, if not defeated by the same provisions, shall be deemed to have been thereby revived.

SECT. 4. This act shall take effect on the first day of July next.

[Approved May 26, 1871.]

[1874. CHAP. 202.]

AN ACT to amend chapter one hundred and two of the General Statutes relating to Sales of Land by Guardians.

Be it enacted, etc., as follows:—

SECTION 1. No guardian, except in case of minors, shall be licensed to sell the real estate of a ward without seven days' notice of the petition therefor to the overseers of the poor of the place where the ward is an inhabitant or resides. Such notice may be served upon any one of such overseers. The provisions of this act shall not apply when the ward resides out of the Commonwealth.

SECT. 2. Section thirty-eight of chapter one hundred and two of the General Statutes is hereby repealed.

SECT. 3. This act shall take effect upon its passage.

[Approved April 28, 1874.]

NOTE.

Some reference to the course of legislation in Massachusetts on this subject of settlements may be useful. As early as 1633 an act was passed respecting idle persons. In 1639 the court or any two of the magistrates were empowered to dispose of unsettled persons as best for their own maintenance and for the country. In 1655 consent of the prudential men was required for settlement, which by act of 1659 vested by three months' residence without notice to leave. In 1675 persons driven from home in King Philip's war were made colony charges. In 1692 prisoners or persons coming for education or cure were not to gain settlement by three months' residence, and the children of unsettled persons, or born out of wedlock, took the place of birth; slaves that of their masters. In 1789 owning a freehold worth three pounds annually

and living on the same two years, two years' residence without warning, five years and paying tax, town vote, marriage and parentage, gave settlement.

The act of 1794, substantially embodied in chapter 69, General Statutes, and which for eighty years had remained and still continues in force with slight modifications, repealed all previous legislation saving existing settlements, and provided: 1. That the wife should follow and have the settlement of her husband, if he have one; if not, retain her own; 2. That legitimate children should take the father's, or, if none, the mother's, if she have one; 3. Illegitimate, that of the mother; 4. That owning a freehold of three pounds' annual value, taking the profits and residing in the place five years, — living on the estate being required by act 1822, ch. 572; 5. Payment of tax on estate valued at sixty pounds, — later two hundred dollars, — five years with residence; 6. Serving as town-clerk, treasurer, selectman, or overseer of the poor, assessor, constable, or collector of taxes; 7. Being settled as a minister duly ordained; 8. Admission by town-meeting; 9. Having home in a place incorporated; 10. Having settlement in a town divided to take in part where then residing, and in a new town composed of a part of one or more, if an inhabitant at the time; 11. Serving apprentice to a trade four years during minority and practising it after majority five years as master; 12. Residence for ten years and paying tax for any five of them should create or determine settlement.

Prior to the act 1868, chapter 328, citizenship was a condition of settlement, and by 1871, chapter 379, the removal of this condition was made retrospective, so as to embrace all cases where the other qualifications required for settlement had been acquired before the passage of the act. The Statutes 1861, chapter 94, and 1866, chapter 234, provided for the relief of the husband not settled in the place where his wife was relieved, so that they should not be separated, his support to be reimbursed by the State.

City Document.— No. 98.

CITY OF BOSTON.



W I D E N I N G
OF
SHAWMUT AVENUE
FROM
LENOX TO ROXBURY STREET.

1874.

CITY OF BOSTON.

IN BOARD OF STREET COMMISSIONERS, Nov. 23, 1874.

RESOLVED, That the safety and convenience of the inhabitants of the city require that Shawmut avenue should be widened from Lenox to Roxbury street, and for that purpose it is necessary to take and lay out as a public street or way of the said city, a parcel of land belonging to JOHN LAMB, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, ninety and $\frac{98}{100}$ feet; southwestwardly by land hereinafter described as taken from Samuel G. Reed, three feet; northwestwardly by the present line of Shawmut avenue, ninety and $\frac{83}{100}$ feet; and northeastwardly by Lenox street, three and $\frac{1}{100}$ feet; containing two hundred and seventy-three square feet, more or less.

A parcel of land belonging to SAMUEL G. REED, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, one hundred ninety and $\frac{98}{100}$ feet; southwestwardly by land hereinafter described as taken from Michael Freeman, three and $\frac{1}{100}$ feet; northwestwardly by the present line of Shawmut avenue, one hundred ninety-one and $\frac{14}{100}$ feet; and northeastwardly by land before described as taken from John Lamb, three feet; containing five hundred and seventy-three square feet, more or less.

A parcel of land belonging to MICHAEL FREEMAN, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-nine and $\frac{44}{100}$ feet; southwestwardly by land hereinafter described as taken from Benjamin F. Griggs, three feet; northwestwardly by the present line of Shawmut avenue, thirty-nine and $\frac{36}{100}$ feet;

and northeastwardly by land before described as taken from Samuel G. Reed, three and $\frac{1}{100}$ feet; containing one hundred and eighteen square feet, more or less.

A parcel of land belonging to BENJAMIN F. GRIGGS, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, twenty-one and $\frac{77}{100}$ feet; southwestwardly by land hereinafter described as taken from John McBarron, three feet; northwestwardly by the present line of Shawmut avenue, twenty-one and $\frac{75}{100}$ feet; and northeastwardly by land before described as taken from Michael Freeman, three feet; containing sixty-five square feet, more or less.

A parcel of land belonging to JOHN MCBARRON, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, eighteen and $\frac{71}{100}$ feet; southwestwardly by a passage-way, three feet; northwestwardly by the present line of Shawmut avenue, eighteen and $\frac{67}{100}$ feet; and northeastwardly by land before described as taken from Benjamin F. Griggs, three feet; containing fifty-six square feet, more or less.

A parcel of land belonging to A PERSON OR PERSONS UNKNOWN (being a portion of a passage-way), bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, ten feet; southwestwardly by land hereinafter described as taken from Benjamin F. Griggs, three feet; northwestwardly by the present line of Shawmut avenue, ten feet; and northeastwardly by land before described as taken from John McBarron, three feet; containing thirty square feet, more or less.

A parcel of land belonging to BENJAMIN F. GRIGGS, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, twenty-four and $\frac{9}{100}$ feet; southwestwardly by land hereinafter described as taken from John McBarron, three and $\frac{1}{100}$ feet; northwestwardly by the present line of Shawmut avenue, twenty-four and $\frac{31}{100}$

feet; and northeastwardly by a passage-way, three feet; containing seventy-three square feet, more or less.

A parcel of land belonging to JOHN MCBARRON, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, twenty-seven feet; southwestwardly by land hereinafter described as taken from the heirs of Samuel A. Way, three and $\frac{1}{100}$ feet; northwestwardly by the present line of Shawmut avenue, twenty-seven feet; and northeastwardly by land before described as taken from Benjamin F. Griggs, three and $\frac{1}{100}$ feet; containing eighty-one square feet, more or less.

A parcel of land belonging to the HEIRS OF SAMUEL A. WAY, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, seventy-one and $\frac{60}{100}$ feet; northwestwardly by the present line of Shawmut avenue, seventy-one and $\frac{60}{100}$ feet; and northeastwardly by land before described as taken from John McBarron, three and $\frac{1}{100}$ feet; containing one hundred and eight square feet, more or less.

A parcel of land belonging to DENNIS F. FLAGG, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, thirty-one and $\frac{2}{100}$ feet; southwestwardly by land hereinafter described as taken from Aaron Kingsbury, five and $\frac{88}{100}$ feet; southeastwardly by the present line of Shawmut avenue, twenty-seven and $\frac{61}{100}$ feet; and northeastwardly by Hammond street, seven and $\frac{6}{100}$ feet; containing one hundred and seventy-seven square feet, more or less.

A parcel of land belonging to AARON KINGSBURY, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, thirty-nine and $\frac{92}{100}$ feet; southwestwardly by land hereinafter described as taken from Sarah A. Morse, five and $\frac{48}{100}$ feet; southeastwardly by the present line of Shawmut avenue, thirty-nine and $\frac{92}{100}$ feet; and northeastwardly by land before described as taken from

Dennis F. Flagg, five and $\frac{8.8}{100}$ feet; containing two hundred and twenty-seven square feet, more or less.

A parcel of land belonging to SARAH A. MORSE, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, nineteen and $\frac{9.6}{100}$ feet; southwestwardly by land hereinafter described as taken from Nathan Morse, five and $\frac{3.0}{100}$ feet; southeastwardly by the present line of Shawmut avenue, nineteen and $\frac{9.6}{100}$ feet; and northeastwardly by land before described as taken from Aaron Kingsbury, five and $\frac{4.8}{100}$ feet; containing one hundred and eight square feet, more or less.

A parcel of land belonging to NATHAN MORSE, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, twenty-one and $\frac{8.0}{100}$ feet; southwestwardly by Windsor street, five and $\frac{1.0}{100}$ feet; southeastwardly by the present line of Shawmut avenue, twenty-one and $\frac{1.7}{100}$ feet; and northeastwardly by land before described as taken from Sarah A. Morse, five and $\frac{3.0}{100}$ feet; containing one hundred and ten square feet, more or less.

A parcel of land belonging to ROBERT SIMPSON, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, one hundred thirty-five and $\frac{7.0}{100}$ feet; southwestwardly by land hereinafter described as taken from Rufus Estabrook, three and $\frac{2.5}{100}$ feet; southeastwardly by the present line of Shawmut avenue, one hundred thirty-five and $\frac{6.7}{100}$ feet; and northeastwardly by Windsor street, four and $\frac{5.9}{100}$ feet; containing five hundred and thirty-two square feet, more or less.

A parcel of land belonging to RUFUS ESTABROOK, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, forty-three and $\frac{9.0}{100}$ feet; southwestwardly by Sterling street, two and $\frac{8.2}{100}$ feet; southeastwardly by the present line of Shawmut avenue, forty-three and $\frac{8.9}{100}$ feet; and northeastwardly by land before described as taken from Robert Simpson, three and $\frac{2.5}{100}$ feet;

containing one hundred and thirty-three square feet, more or less.

A parcel of land belonging to LUCINDA M. AVERY, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Shawmut avenue, eighteen and $\frac{43}{100}$ feet ; southwestwardly by land hereinafter described as taken from George P. French, two and $\frac{13}{100}$ feet ; southeastwardly by the present line of Shawmut avenue, eighteen and $\frac{43}{100}$ feet ; and northeastwardly by Sterling street, two and $\frac{30}{100}$ feet ; containing forty-one square feet, more or less.

A parcel of land belonging to GEORGE P. FRENCH, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Shawmut avenue, eighteen and $\frac{1}{100}$ feet ; southwestwardly by land hereinafter described as taken from Alden Avery, one foot and $\frac{95}{100}$ of a foot ; southeastwardly by the present line of Shawmut avenue, eighteen and $\frac{1}{100}$ feet ; and northeastwardly by land before described as taken from Lucinda M. Avery, two and $\frac{13}{100}$ feet ; containing thirty-seven square feet, more or less.

A parcel of land belonging to ALDEN AVERY, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Shawmut avenue, thirty-six and $\frac{1}{100}$ feet ; southwestwardly by land hereinafter described as taken from the heirs of Thomas Marshall, one foot and $\frac{59}{100}$ of a foot ; southeastwardly by the present line of Shawmut avenue, thirty-six and $\frac{1}{100}$ feet ; and northeastwardly by land before described as taken from George P. French, one foot and $\frac{95}{100}$ of a foot ; containing sixty-four square feet, more or less.

A parcel of land belonging to the HEIRS OF THOMAS MARSHALL, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Shawmut avenue, eighteen and $\frac{1}{100}$ feet ; southwestwardly by land hereinafter described as taken from William Bleakley, one foot and $\frac{41}{100}$ of a foot ; southeastwardly by the present line of Shawmut avenue, eighteen and $\frac{1}{100}$ feet ; and northeastwardly by land before

described as taken from Alden Avery, one foot and $\frac{5.9}{100}$ of a foot; containing twenty-seven square feet, more or less.

A parcel of land belonging to WILLIAM BLEAKLEY, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, nineteen and $\frac{5}{100}$ feet; southwestwardly by land hereinafter described as taken from Charles H. Hayden, one foot and $\frac{2.3}{100}$ of a foot; southeastwardly by the present line of Shawmut avenue, nineteen and $\frac{5}{100}$ feet; and northeastwardly by land before described as taken from the heirs of Thomas Marshall, one foot and $\frac{4.1}{100}$ of a foot; containing twenty-five square feet, more or less.

A parcel of land belonging to CHARLES H. HAYDEN, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, one hundred four and $\frac{1.5}{100}$ feet; southwestwardly by Williams street, $\frac{2.1}{100}$ of a foot; southeastwardly by the present line of Shawmut avenue, one hundred four and $\frac{1.4}{100}$ feet; and northeastwardly by land before described as taken from William Bleakley, one foot and $\frac{2.3}{100}$ of a foot; containing seventy-five square feet, more or less.

A parcel of land belonging to L. G. PARMELEE, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, one hundred five and $\frac{4.2}{100}$ feet; southwestwardly by Williams street, twelve and $\frac{1.7}{100}$ feet; and northwestwardly by the present line of Shawmut avenue, one hundred four and $\frac{9.4}{100}$ feet; containing six hundred and thirty-nine square feet, more or less.

A parcel of land belonging to HERMAN W. YOUNG, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, forty-five and $\frac{5.9}{100}$ feet; southwestwardly by land hereinafter described as taken from Phoebe Daniels, nine and $\frac{8.2}{100}$ feet; northwestwardly by the present line of Shawmut avenue, forty-five and $\frac{8.5}{100}$ feet; and northeastwardly by Williams street, nine and $\frac{9.1}{100}$

feet; containing four hundred and forty-seven square feet, more or less.

A parcel of land belonging to PHŒBE DANIELS, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-five and $\frac{88}{100}$ feet; southwestwardly by land hereinafter described as taken from Israel Huckins, nine and $\frac{52}{100}$ feet; northwestwardly by the present line of Shawmut avenue, thirty-five and $\frac{77}{100}$ feet; and northeastwardly by land before described as taken from Herman W. Young, nine and $\frac{82}{100}$ feet; containing three hundred and forty-three square feet, more or less.

A parcel of land belonging to ISRAEL HUCKINS, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-six and $\frac{29}{100}$ feet; southwestwardly by land hereinafter described as taken from George W. Hunnewell, nine and $\frac{32}{100}$ feet; northwestwardly by the present line of Shawmut avenue, thirty-six and $\frac{78}{100}$ feet; and northeastwardly by land before described as taken from Phœbe Daniels, nine and $\frac{52}{100}$ feet; containing three hundred and forty-two square feet, more or less.

A parcel of land belonging to GEORGE W. HUNNEWELL, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-eight and $\frac{22}{100}$ feet; southwestwardly by land hereinafter described as taken from Arthur Libby, nine and $\frac{41}{100}$ feet; northwestwardly by the present line of Shawmut avenue, thirty-eight and $\frac{84}{100}$ feet; and northeastwardly by land before described as taken from Israel Huckins, nine and $\frac{32}{100}$ feet; containing three hundred and sixty square feet, more or less.

A parcel of land belonging to ARTHUR LIBBY, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-three and $\frac{5}{100}$ feet; southwestwardly by land hereinafter described as taken from William and Augustus Bacon, nine and $\frac{68}{100}$ feet; northwestwardly by the present line of Shawmut avenue, thirty-

one and $\frac{6.5}{100}$ feet; and northeastwardly by land before described as taken from George W. Hunnewell, nine and $\frac{41}{100}$ feet; containing three hundred and seven square feet, more or less.

A parcel of land belonging to WILLIAM AND AUGUSTUS BACON, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, one hundred fifty-seven and $\frac{17}{100}$ feet; southwestwardly by Ruggles street, ten feet; northwestwardly by the present line of Shawmut avenue, one hundred fifty-six and $\frac{25}{100}$ feet; and northeastwardly by land before described as taken from Arthur Libby, nine and $\frac{6.8}{100}$ feet; containing fifteen hundred and six square feet, more or less.

A parcel of land belonging to WILLIAM F. BELL, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-nine and $\frac{70}{100}$ feet; southwestwardly by land hereinafter described as taken from Edwin R. Jenness, nine and $\frac{12}{100}$ feet; northwestwardly by the present line of Shawmut avenue, forty-one and $\frac{89}{100}$ feet; and northeastwardly by Ruggles street, nine and $\frac{98}{100}$ feet; containing three hundred and eighty-two square feet, more or less.

A parcel of land belonging to EDWIN R. JENNESS, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, sixty-two and $\frac{93}{100}$ feet; southwestwardly by land hereinafter described as taken from Michael and Peter A. Riley, eight and $\frac{26}{100}$ feet; northwestwardly by the present line of Shawmut avenue, sixty-two and $\frac{98}{100}$ feet; and northeastwardly by land before described as taken from William F. Bell, nine and $\frac{12}{100}$ feet; containing five hundred and forty-seven square feet, more or less.

A parcel of land belonging to MICHAEL AND PETER A. RILEY, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, twenty-six and $\frac{50}{100}$ feet; southwestwardly by land hereinafter described

as taken from John Good, seven and $\frac{9.3}{100}$ feet; northwestwardly by the present line of Shawmut avenue, twenty-six and $\frac{4.0}{100}$ feet; and northeastwardly by land before described as taken from Edwin R. Jenness, eight and $\frac{2.6}{100}$ feet; containing two hundred and fourteen square feet, more or less.

A parcel of land belonging to JOHN GOOD, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-five and $\frac{4}{100}$ feet; southwestwardly by land hereinafter described as taken from Joseph B. Sharland and others, seven and $\frac{5.3}{100}$ feet; northwestwardly by the present line of Shawmut avenue, thirty-five and $\frac{4.4}{100}$ feet; and northeastwardly by land before described as taken from Michael and Peter A. Riley, seven and $\frac{9.3}{100}$ feet; containing two hundred and seventy-two square feet, more or less.

A parcel of land belonging to JOSEPH B. SHARLAND, JOHN K. SARTWELL and JOHN HUMPHREY, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, seventy-three and $\frac{4}{100}$ feet; southwestwardly by land hereinafter described as taken from Edward F. Litchfield, six and $\frac{5.8}{100}$ feet; northwestwardly by the present line of Shawmut avenue, seventy-three feet; and northeastwardly by land before described as taken from John Good, seven and $\frac{5.3}{100}$ feet; containing five hundred and eighteen square feet, more or less.

A parcel of land belonging to EDWARD F. LITCHFIELD, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, forty-two and $\frac{5.5}{100}$ feet; southwestwardly by land hereinafter described as taken from Caroline Homer, six and $\frac{1.3}{100}$ feet; northwestwardly by the present line of Shawmut avenue, forty-two and $\frac{5.7}{100}$ feet; and northeastwardly by land before described as taken from Joseph B. Sharland and others, six and $\frac{5.8}{100}$ feet; containing two hundred and seventy-one square feet, more or less.

A parcel of land belonging to CAROLINE HOMER, bounded

as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, thirty-two and $\frac{17}{100}$ feet; southwestwardly by land hereinafter described as taken from William S. Cordingley, five and $\frac{75}{100}$ feet; northwestwardly by the present line of Shawmut avenue, thirty-two and $\frac{6}{100}$ feet; and northeastwardly by land before described as taken from Edward F. Litchfield, six and $\frac{18}{100}$ feet; containing one hundred and ninety-one square feet, more or less.

A parcel of land belonging to WILLIAM S. CORDINGLEY, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, twenty-five and $\frac{41}{100}$ feet; southwestwardly by a passage-way, five and $\frac{60}{100}$ feet; northwestwardly by the present line of Shawmut avenue, twenty-five and $\frac{11}{100}$ feet; and northeastwardly by land before described as taken from Caroline Homer, five and $\frac{75}{100}$ feet; containing one hundred and forty-three square feet, more or less.

A parcel of land belonging to A PERSON, OR PERSONS, UNKNOWN (a portion of a passage-way), bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, nine and $\frac{96}{100}$ feet; southwestwardly by land hereinafter described as taken from John Griggs, five and $\frac{44}{100}$ feet; northwestwardly by the present line of Shawmut avenue, nine and $\frac{94}{100}$ feet; and northeastwardly by land before described as taken from William S. Cordingley, five and $\frac{60}{100}$ feet; containing fifty-five square feet, more or less.

A parcel of land belonging to JOHN GRIGGS, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, twenty-five and $\frac{35}{100}$ feet; southwestwardly by land hereinafter described as taken from John J. Dowd, five and $\frac{4}{100}$ feet; northwestwardly by the present line of Shawmut avenue, twenty-five and $\frac{14}{100}$ feet; and northeastwardly by a passage-way, five and $\frac{44}{100}$ feet;

containing one hundred and thirty-two square feet, more or less.

A parcel of land belonging to JOHN J. DOWD, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, ninety-three and $\frac{91}{100}$ feet; southwestwardly by Vernon street, three and $\frac{96}{100}$ feet; northwestwardly by the present line of Shawmut avenue, ninety-four and $\frac{40}{100}$ feet; and northeastwardly by land before described as taken from John Griggs, five and $\frac{4}{100}$ feet; containing four hundred and twenty-three square feet, more or less.

A parcel of land belonging to HIRAM JOHNSON, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Shawmut avenue, one hundred forty and $\frac{78}{100}$ feet; northwestwardly by the present line of Shawmut avenue, one hundred forty and $\frac{91}{100}$ feet; and northeastwardly by Vernon street, two and $\frac{45}{100}$ feet; containing one hundred and seventy-two square feet, more or less.

A parcel of land belonging to JOSEPH HAM, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, twenty-two and $\frac{11}{100}$ feet; southwestwardly by land hereinafter described as taken from Francis J. Abele, one foot and $\frac{20}{100}$ of a foot; southeastwardly by the present line of Shawmut avenue, twenty-one and $\frac{91}{100}$ feet; and northeastwardly by Ruggles street, $\frac{90}{100}$ of a foot; containing twenty-three square feet, more or less.

A parcel of land belonging to FRANCIS J. ABELE, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, twenty-nine and $\frac{60}{100}$ feet; southwestwardly by land hereinafter described as taken from Daniel Clark, one foot and $\frac{70}{100}$ of a foot; southeastwardly by the present line of Shawmut avenue, twenty-nine and $\frac{70}{100}$ feet; and northeastwardly by land before described as taken

from Joseph Ham, one foot and $\frac{2}{100}$ of a foot; containing forty-three square feet, more or less.

A parcel of land belonging to DANIEL CLARK, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, forty-seven and $\frac{1}{100}$ feet; southwestwardly by land hereinafter described as taken from John Rogers, two and $\frac{4}{100}$ feet; southeastwardly by the present line of Shawmut avenue, forty-seven and $\frac{2}{100}$ feet; and northeastwardly by land before described as taken from Francis J. Abele, one foot and $\frac{7}{100}$ of a foot; containing ninety-eight square feet, more or less.

A parcel of land belonging to JOHN ROGERS, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, forty-one and $\frac{3}{100}$ feet; southwestwardly by land hereinafter described as taken from Emil F. Ackerman, three and $\frac{1}{100}$ feet; southeastwardly by the present line of Shawmut avenue, forty-one and $\frac{2}{100}$ feet; and northeastwardly by land before described as taken from Daniel Clark, two and $\frac{4}{100}$ feet; containing one hundred and fifteen square feet, more or less.

A parcel of land belonging to EMIL F. ACKERMAN, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, forty and $\frac{1}{100}$ feet; southwestwardly by land hereinafter described as taken from the German M. E. Church, three and $\frac{7}{100}$ feet; southeastwardly by the present line of Shawmut avenue, forty and $\frac{2}{100}$ feet; and northeastwardly by land before described as taken from John Rogers, three and $\frac{1}{100}$ feet; containing one hundred and thirty-eight square feet, more or less.

A parcel of land belonging to the GERMAN METHODIST EPISCOPAL CHURCH, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, twenty and $\frac{3}{100}$ feet; southwestwardly by the same, one foot and $\frac{5}{100}$ of a foot; again northwestwardly by the same, fifty and $\frac{3}{100}$ feet; again southwestwardly by land hereinafter

described as taken from William H. Palmer, three and $\frac{16}{100}$ feet; southeastwardly by the present line of Shawmut avenue, seventy and $\frac{66}{100}$ feet; and northeastwardly by land before described as taken from Emil F. Ackerman, three and $\frac{78}{100}$ feet; containing two hundred and twenty-four square feet, more or less.

A parcel of land belonging to WILLIAM H. PALMER, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, forty-four feet; southwestwardly by land hereinafter described as taken from William R. Howe, five and $\frac{60}{100}$ feet; southeastwardly by the present line of Shawmut avenue, forty-four feet; and northeastwardly by land before described as taken from the German M. E. Church, and by the said proposed line of widening of Shawmut avenue, four and $\frac{85}{100}$ feet; containing two hundred and thirty square feet, more or less.

A parcel of land belonging to WILLIAM R. HOWE, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, sixty and $\frac{50}{100}$ feet; southwestwardly by land hereinafter described as taken from Ann Vanier, six and $\frac{58}{100}$ feet; southeastwardly by the present line of Shawmut avenue, sixty and $\frac{15}{100}$ feet; and northeastwardly by land before described as taken from William H. Palmer, five and $\frac{60}{100}$ feet; containing three hundred and sixty-seven square feet, more or less.

A parcel of land belonging to ANN VANIER, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, thirty and $\frac{41}{100}$ feet; southwestwardly by land hereinafter described as taken from Cynthia W. Batchelder, seven and $\frac{30}{100}$ feet; southeastwardly by the present line of Shawmut avenue, thirty and $\frac{39}{100}$ feet; and northeastwardly by land before described as taken from William R. Howe, six and $\frac{58}{100}$ feet; containing two hundred and seven square feet, more or less.

A parcel of land belonging to CYNTHIA W. BATCHELDER,

bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, thirty and $\frac{12}{100}$ feet; southwestwardly by land hereinafter described as taken from John Moore, seven and $\frac{50}{100}$ feet; southeastwardly by the present line of Shawmut avenue, thirty and $\frac{4}{100}$ feet; and northeastwardly by land before described as taken from Ann Vanier, seven and $\frac{3}{100}$ feet; containing two hundred and eighteen square feet, more or less.

A parcel of land belonging to JOHN MOORE, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, sixty and $\frac{20}{100}$ feet; southwestwardly by Vernon street, seven and $\frac{52}{100}$ feet; southeastwardly by the present line of Shawmut avenue, sixty and $\frac{17}{100}$ feet; and northeastwardly by land before described as taken from Cynthia W. Batchelder, seven and $\frac{50}{100}$ feet; containing four hundred and fifty-one square feet, more or less.

A parcel of land belonging to REUBEN M. STACKPOLE, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, one hundred forty-eight and $\frac{38}{100}$ feet; southwestwardly by land hereinafter described as taken from William Minot, thirteen and $\frac{16}{100}$ feet; southeastwardly by the present line of Shawmut avenue, one hundred forty-eight and $\frac{60}{100}$ feet; and northeastwardly by Vernon street, twelve and $\frac{58}{100}$ feet; containing nineteen hundred and eleven square feet, more or less.

A parcel of land belonging to WILLIAM MINOT, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, seventy-one feet; southwestwardly by land hereinafter described as taken from Horace B. Sargent, twelve and $\frac{22}{100}$ feet; southeastwardly by the present line of Shawmut avenue, seventy-one feet; and northeastwardly by land before described as taken from Reuben M. Stackpole, thirteen and $\frac{10}{100}$ feet; containing nine hundred and three square feet, more or less.

A parcel of land belonging to HORACE B. SARGENT, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Shawmut avenue, two hundred three and $\frac{12}{100}$ feet; southwestwardly by Roxbury street, ten and $\frac{8}{100}$ feet; southeastwardly by the present line of Shawmut avenue, two hundred two and $\frac{6.5}{100}$ feet; and northeastwardly by land before described as taken from William Minot, twelve and $\frac{3.2}{100}$ feet; containing twenty-two hundred and seventy-nine square feet, more or less.

AND WHEREAS due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, IT IS THEREFORE ORDERED, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, according to a plan of the said widening made by T. W. Davis, City Surveyor, dated April 8, 1874, and deposited in his office. And this Board doth adjudge that the expense of widening the said Shawmut avenue, as aforesaid, will amount to fifty-three thousand three hundred forty-one and $\frac{6.5}{100}$ dollars, and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

ESTATES.	Number on the street.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before widening.	Value of buildings after widening.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.	Remarks.
John Lamb	Cor. Lenox st.	273	\$4 00	\$1,002 00				\$150 00	\$1,242 00	
Samuel G. Reed	622 and vacant.	573	2 50	1,432 50					1,432 50	
Michael Freeman . . .	624-6	118	2 75	324 50					324 50	
Benj. F. Griggs	623	65	2 75	178 75					178 75	
John McBarron	630	56	2 75	154 00					154 00	
Unknown owners . . .	Passage.	30								
Benj. F. Griggs	634	73	2 75	200 75					200 75	
John McBarron	636-8	81	2 75	222 75					222 75	
Heirs of Sam'l A. Way	644 to 652	108	2 25	243 00					243 00	
Dennis F. Flagg	663	177	2 50	442 50					442 50	
Aaron Kingsbury . . .	667-9	227	2 25	510 75					510 75	
Sarah A. Morse	671	103	2 25	243 00					243 00	
Nathan Morse	673	110	2 50	275 00					275 00	
Robert Simpson	Cor. Windsor st.	532	2 30	1,223 60					1,223 60	
Rufus Estabrook	Cor. Sterling st.	133	2 35	312 55					312 55	
Lucinda M. Avery . . .	697	41	2 50	102 50					102 50	
George P. French	699	37	2 25	83 25					83 25	
Alden Avery	701-3	64	2 25	144 00					144 00	
Heirs of Thos. Marshall	705	27	2 25	60 75					60 75	
William Bleakley . . .	707	25	2 25	56 25					56 25	
Charles H. Hayden . . .	709 to 721	75	2 25	168 75				20 00	198 75	
L. G. Parmelee	Cor. Williams st.	639	2 50	1,597 50	\$3,000 00	\$800 00		2,500 00	4,097 50	
Herman W. Young . . .	Cor. Williams st.	447	2 75	1,229 25				30 00	1,259 25	
Phoebe Daniels	726	343	2 50	857 50				200 00	1,057 50	
Israel Huckins	734	342	2 50	855 00				500 00	1,355 00	
George W. Hunnewell .	736	330	2 25	810 00	1,900 00	400 00		1,700 00	2,510 00	
Arthur Libby	738	307	2 00	614 00	2,700 00	500 00		2,450 00	3,064 00	
W. and A. Bacon	Cor. Ruggles st.	1,506	2 00	3,012 00				40 00	3,052 00	
William F. Bell	758	382	2 50	955 00				25 00	980 00	
Edwin R. Jenness . . .	764-8	547	2 00	1,094 00				30 00	1,124 00	
M. and P. A. Riley . . .	770	214	1 75	374 50				12 00	386 50	
John Good	774	272	1 75	476 00				15 00	491 00	
Joseph B. Sharland and others	776-82	518	1 75	906 50				45 00	951 50	
Edward F. Litchfield . .	784	271	1 75	474 25				20 00	494 25	
Caroline Homer	789	191	1 75	334 25				15 00	349 25	
W. S. Cordingley	792	143	2 00	286 00				15 00	301 00	
Unknown owners	Passage.	55								
John Griggs	794	132	2 00	264 00				150 00	414 00	
John J. Dowd	Cor. Vernon st.	423	2 50	1,057 50				300 00	1,357 50	
Hiram Johnson	806	172	2 50	430 00				30 00	460 00	
Joseph Ham	757	23	2 50	57 50				12 00	69 50	
Francis J. Abele	759	43	2 00	86 00				30 00	116 00	
Daniel Clark	763	98	1 75	171 50				25 00	196 50	
John Rogers	767	115	1 75	201 25				20 00	221 25	
Emil F. Ackerman . . .	771	138	1 75	241 50				20 00	261 50	
German M. E. Church . .	777	224	1 75	392 00				10 00	402 00	
W. H. Palmer	Vacant.	230	1 50	345 00					345 00	
W. R. Howe	787-9	387	1 75	642 25				30 00	672 25	
Ann Vanier	793	207	1 75	362 25				30 00	392 25	
Cynthia W. Batchelder	795	218	1 75	381 50				30 00	411 50	
John Moore	Cor. Vernon st.	451	2 50	1,127 50	2,000 00	500 00		1,750 00	2,877 50	
Reuben M. Stackpole . .	Cor. Vernon st.	1,911	2 50	4,777 50	2,500 00	500 00		2,250 00	7,027 50	
William Minot	Car stable.	903	2 00	1,806 00					1,806 00	
Horace B. Sargent . . .	Cor. Roxb'ry st.	2,279	2 50	5,697 50	1,500 00	300 00		1,500 00	7,197 50	
		17,404		\$39,387 65	\$13,600 00	\$3,000 00		\$13,954 00	\$53,341 65	

City Document.—No. 99.

CITY OF BOSTON.



WIDENING

OF

LEVERETT STREET.

1874.

CITY OF BOSTON.

IN BOARD OF STREET COMMISSIONERS, NOV. 27, 1874.

RESOLVED, That the safety and convenience of the inhabitants of the city require that LEVERETT STREET should be widened on the southwesterly side, from Charles street to Brighton street; and for that purpose it is necessary to take and lay out as a public street or way of the said city, a parcel of land belonging to LEWIS CLARK, bounded as follows, vi . : Southwestwardly by the proposed line of widening of Leverett street, forty-three and $\frac{93}{100}$ feet; northwestwardly by Charles street, twenty and $\frac{5}{100}$ feet; northeastwardly by the present line of Leverett street, forty-one and $\frac{90}{100}$ feet; and southeastwardly by land hereinafter described as taken from Dennis F. Flagg, twenty feet; containing eight hundred and fifty-eight square feet, more or less.

A parcel of land belonging to DENNIS F. FLAGG, bounded as follows, viz. : Southwestwardly by the proposed line of widening of Leverett street, fifteen and $\frac{50}{100}$ feet; northwestwardly by land before described as taken from Lewis Clark, twenty feet; northeastwardly by the present line of Leverett street, fifteen and $\frac{50}{100}$ feet; and southeastwardly by land hereinafter described as taken from unknown owners, twenty feet; containing three hundred and ten square feet, more or less.

A parcel of land belonging to A PERSON, OR PERSONS, UNKNOWN (being a portion of a passage-way), bounded as follows, viz. : Southeastwardly by the proposed line of

widening of Leverett street, three feet; northwestwardly by land before described as taken from Dennis F. Flagg, twenty feet; northeastwardly by the present line of Leverett street, three feet; and southeastwardly by land hereinafter described as taken from Daniel Boyle and wife, twenty feet; containing sixty square feet, more or less.

A parcel of land belonging to DANIEL BOYLE AND WIFE, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Leverett street, ten feet; northwestwardly by land before described as taken from unknown owners, twenty feet; northeastwardly by the present line of Leverett street, ten feet; and southeastwardly by land hereinafter described as taken from Joshua W. Clapp and Smith Wright, twenty feet; containing two hundred square feet, more or less.

A parcel of land belonging to JOSHUA W. CLAPP AND SMITH WRIGHT, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Leverett street, seventeen and $\frac{5.0}{100}$ feet; northwestwardly by land before described as taken from Daniel Boyle and wife, twenty feet; northeastwardly by the present line of Leverett street, seventeen and $\frac{5.0}{100}$ feet; and southeastwardly by land hereinafter described as taken from the heirs of Daniel Breen, twenty feet; containing three hundred and fifty square feet, more or less.

A parcel of land belonging to the HEIRS OF DANIEL BREEN, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Leverett street, seventeen and $\frac{5.0}{100}$ feet; northwestwardly by land before described as taken from Joshua W. Clapp and Smith Wright, twenty feet; northeastwardly by the present line of Leverett street, seventeen and $\frac{5.0}{100}$ feet; and southeastwardly by the northwesterly line of Auburn street extended to Leverett street by a resolve and order of this Board of Street Commissioners, of an even date herewith, twenty feet; containing three hundred and fifty square feet, more or less.

A parcel of land belonging to the HEIRS OF JOSHUA BENNETT, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Leverett street, twenty-four and $\frac{72}{100}$ feet; northwestwardly by the southeasterly line of Auburn street extended to Leverett street by said resolve and order of this Board of Street Commissioners, of even date herewith, twenty feet; northeastwardly by the present line of Leverett street, twenty-seven feet; and southeastwardly by the same and by land hereinafter described as taken from Lewis Clark, twenty-two and $\frac{90}{100}$ feet; containing five hundred and fifty-three square feet, more or less.

A parcel of land belonging to LEWIS CLARK, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Leverett street, thirty-seven and $\frac{79}{100}$ feet; northwestwardly by land before described as taken from the heirs of Joshua Bennett, twenty-two and $\frac{10}{100}$ feet; northeastwardly by the present line of Leverett street, thirty-eight and $\frac{17}{100}$ feet; and southeastwardly by land hereinafter described as taken from Austin W. Benton, nineteen and $\frac{8}{100}$ feet; containing seven hundred and eighty-one square feet, more or less.

A parcel of land belonging to AUSTIN W. BENTON, bounded as follows, viz.: Southwestwardly by the proposed line of widening of Leverett street, fifty-nine and $\frac{45}{100}$ feet; northwestwardly by land before described as taken from Lewis Clark, nineteen and $\frac{8}{100}$ feet; northeastwardly by the present line of Leverett street, fifty-nine and $\frac{27}{100}$ feet; and southeastwardly by Brighton street, fourteen and $\frac{33}{100}$ feet; containing nine hundred and ninety square feet, more or less.

AND WHEREAS due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, IT IS THEREFORE ORDERED, that the parcels of land before described be and the same hereby are taken and laid out as

a public street or way of the said city, according to a plan of the said widening made by T. W. Davis, City Surveyor, dated October 8, 1874, and deposited in his office. And this Board doth adjudge that the expense of widening the said Leverett street, as aforesaid, will amount to forty-one thousand nine hundred and seventy dollars; and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

Estimate of Damages occasioned by the widening of Leverett Street, 1874.

ESTATES.	Number on the street.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before widening.	Value of buildings after widening.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.	Remarks.
Lewis Clark	Cor. Leverett and Charles.	853	\$4 50	\$3,861 00					\$3,861 00	
Dennis F. Flagg		310	3 50	1,085 00					1,085 00	
Unknown Owners	Passage.	60								
Daniel Boyle and wife	142½	200	4 00	800 00	\$600 00			\$600 00	1,400 00	
J. W. Clapp and Smith Wright	142	350	4 00	1,400 00	700 00			700 00	2,100 00	
Heirs of Daniel Breen	140	350	4 00	1,400 00	1,000 00			1,000 00	2,400 00	
Heirs of Joshua Bennett	134	553	3 50	1,935 50	1,000 00			1,000 00	2,935 50	
Lewis Clark	130 and 132	781	3 50	2,733 50	12,500 00		\$2,500 00	10,000 00	12,733 50	
Austin W. Benton	128 and cor. Brighton street.	990	4 50	4,455 00	12,000 00		1,000 00	11,000 00	15,455 00	
		4,452		\$17,670 00	\$27,800 00		\$3,500 00	\$24,300 00	\$41,970 00	

City Document.—No. 100.

CITY OF BOSTON.



W I D E N I N G

OF

BOWDOIN STREET.

1874.

CITY OF BOSTON.

IN BOARD OF STREET COMMISSIONERS, Nov. 30, 1874.

RESOLVED, That the safety and convenience of the inhabitants of the city require that BOWDOIN STREET should be widened between Adams and Washington streets, and for that purpose it is necessary to take and lay out as a public street or way of the said city, a parcel of land belonging to E. P. ROBINSON, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, one hundred thirty-six and $\frac{50}{100}$ feet; eastwardly by said line of widening on a curve of ten feet radius, twenty-five and $\frac{2}{100}$ feet; southwardly by Church street, forty-nine feet; westwardly by the line forming the present junction of Church and Bowdoin streets, twenty-five feet; northwestwardly by the present line of Bowdoin street, one hundred sixteen and $\frac{10}{100}$, and fourteen and $\frac{90}{100}$ feet; and northwardly by the same, and by land hereinafter described as taken from unknown owners, fifty and $\frac{20}{100}$ feet; containing forty-five hundred and seventy-five square feet, more or less.

A parcel of land belonging to A PERSON, OR PERSONS, UNKNOWN, bounded as follows, viz.: Southwardly by land before described as taken from E. P. Robinson, and by the proposed line of widening of Bowdoin street, thirty-six and $\frac{50}{100}$ feet; westwardly by the present line of Bowdoin street, nine and $\frac{20}{100}$ feet; and northwardly by the same, on three lines, six and $\frac{45}{100}$, nineteen and $\frac{35}{100}$, and thirteen feet, respectively; containing three hundred and six square feet, more or less.

A parcel of land belonging to WILLIAM HANNAN, bounded as follows, viz. : Westwardly by the proposed line of widening of Bowdoin street, on a curve of twenty and $\frac{22}{100}$ feet radius, forty-four and $\frac{59}{100}$ feet ; northwestwardly by said proposed line of widening, one hundred five and $\frac{98}{100}$ feet ; southwestwardly by land hereinafter described as taken from Benjamin A. Brown, three and $\frac{58}{100}$ feet ; southeastwardly by the present line of Bowdoin street, one hundred twenty-three and $\frac{18}{100}$ feet ; and eastwardly by the same where it makes a junction with Green street, forty and $\frac{40}{100}$ feet ; containing four hundred and forty-seven square feet, more or less.

A parcel of land belonging to BENJAMIN A. BROWN, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Bowdoin street, forty-two and $\frac{50}{100}$ feet ; southwestwardly by land hereinafter described as taken from Warren W. H. Richards, four and $\frac{72}{100}$ feet ; southeastwardly by the present line of Bowdoin street, forty-four feet ; and northeastwardly by land before described as taken from William Hannan, three and $\frac{58}{100}$ feet ; containing one hundred and seventy-six square feet, more or less.

A parcel of land belonging to WARREN W. H. RICHARDS, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Bowdoin street, one hundred sixteen and $\frac{90}{100}$ feet ; southwestwardly by land hereinafter described as taken from the heirs of James Davenport, five and $\frac{98}{100}$ feet ; southeastwardly by the present line of Bowdoin street, sixty-seven and $\frac{47}{100}$ and fifty and $\frac{20}{100}$ feet ; and northeastwardly by land before described as taken from Benjamin A. Brown, four and $\frac{72}{100}$ feet ; containing eight hundred and forty-seven square feet, more or less.

A parcel of land belonging to the HEIRS OF JAMES DAVENPORT, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Bowdoin street, one hundred twelve and $\frac{97}{100}$ feet ; southeastwardly by the present

line of Bowdoin street, one hundred eleven and $\frac{30}{100}$ feet ; and northeastwardly by land before described as taken from Warren W. H. Richards, five and $\frac{98}{100}$ feet ; containing three hundred and nine square feet, more or less.

Another parcel of land belonging to the HEIRS OF JAMES DAVENPORT, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Bowdoin street, eighty-four and $\frac{58}{100}$ feet ; southwestwardly by land hereinafter described as taken from the heirs of Benjamin F. Brown, one and $\frac{20}{100}$ feet ; and southeastwardly by the present line of Bowdoin street, eighty-four and $\frac{75}{100}$ feet ; containing forty-three square feet, more or less.

A parcel of land belonging to the HEIRS OF BENJAMIN F. BROWN, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Bowdoin street, on a curve of seven hundred seventy-eight and $\frac{80}{100}$ feet radius, one hundred eleven and $\frac{60}{100}$ feet ; southwestwardly by land hereinafter described as taken from Eliza J. Cooper, eight and $\frac{33}{100}$ feet ; southeastwardly by the present line of Bowdoin street, fifty-three and $\frac{36}{100}$ feet, and sixty and $\frac{26}{100}$ feet ; and northeastwardly by the same and by land before described as taken from the heirs of James Davenport, two and $\frac{20}{100}$ feet ; containing six hundred and ninety-three square feet, more or less.

A parcel of land belonging to ELIZA J. COOPER, WIFE OF THOMAS R. COOPER, bounded as follows, viz. : Northwestwardly by the proposed line of widening of Bowdoin street, on a curve of seven hundred seventy-eight and $\frac{80}{100}$ feet radius, one hundred ten and $\frac{55}{100}$ feet ; southwestwardly by land hereinafter described as taken from the heirs of Benjamin F. Brown, ten and $\frac{65}{100}$ feet ; southeastwardly by the present line of Bowdoin street, one hundred eleven and $\frac{55}{100}$ feet ; and northeastwardly by land before described as taken from the heirs of Benjamin F. Brown, eight and $\frac{33}{100}$ feet ;

containing nine hundred and twenty-eight square feet, more or less.

A parcel of land belonging to the HEIRS OF BENJAMIN F. BROWN, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Bowdoin street, on a curve of seven hundred seventy-eight and $\frac{8.0}{100}$ feet radius, thirty-four and $\frac{2.2}{100}$ feet; southwestwardly by land hereinafter described as taken from Frances M. Gleason, eleven and $\frac{9.7}{100}$ feet; southeastwardly by the present line of Bowdoin street, thirty-four and $\frac{7.5}{100}$ feet; and northeastwardly by land before described as taken from Eliza J. Cooper, ten and $\frac{6.5}{100}$ feet; containing three hundred and eighty-five square feet, more or less.

A parcel of land belonging to FRANCES M. GLEASON, WIFE OF THOMAS V. GLEASON, bounded as follows, viz.: Northwestwardly by the proposed line of widening of Bowdoin street, on a curve of seven hundred seventy-eight and $\frac{8.0}{100}$ feet, fifty and $\frac{5.8}{100}$ feet; again northwestwardly by the proposed line of widening of Bowdoin street, fifty-five and $\frac{6.0}{100}$ feet; southwestwardly by the present line of Bowdoin street, three and $\frac{2.6}{100}$ feet; southeastwardly by the same, ninety-six and $\frac{9.0}{100}$ feet; and northeastwardly by land before described as taken from the heirs of Benjamin F. Brown, eleven and $\frac{9.7}{100}$ feet; containing eight hundred and seventy square feet, more or less.

A parcel of land belonging to OLIVER DITSON, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, one hundred sixty-six and $\frac{2.3}{100}$ feet; southwestwardly by land hereinafter described as taken from the Saint Mary's Episcopal Church, twelve and $\frac{4.0}{100}$ feet; and northwestwardly by the present line of Bowdoin street, one hundred sixty-five and $\frac{7.8}{100}$ feet; containing ten hundred and twenty-nine square feet, more or less.

A parcel of land belonging to the SAINT MARY'S EPISCOPAL

CHURCH, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, two hundred and $\frac{15}{100}$ feet; southwestwardly by land hereinafter described as taken from Oliver Ditson, fifteen and $\frac{85}{100}$ feet; northwestwardly by the present line of Bowdoin street, one hundred and ninety-three feet; and northeastwardly by land before described as taken from Oliver Ditson, twelve and $\frac{40}{100}$ feet; containing twenty-six hundred and eighty-three square feet, more or less.

A parcel of land belonging to OLIVER DITSON (being part of a private street), bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, thirty-seven and $\frac{56}{100}$ feet; southwestwardly by land hereinafter described as taken from the Right Reverend J. J. Williams, fifteen and $\frac{60}{100}$ feet; northwestwardly by the present line of Bowdoin street, thirty-seven and $\frac{56}{100}$ feet; and northeastwardly by land before described as taken from the Saint Mary's Episcopal Church, fifteen and $\frac{85}{100}$ feet; containing five hundred and eighteen square feet, more or less.

A parcel of land belonging to the RIGHT REVEREND J. J. WILLIAMS, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, one hundred seventy-three and $\frac{43}{100}$ feet; southwestwardly by land hereinafter described as taken from JOHN WALL, thirteen and $\frac{51}{100}$ feet; northwestwardly by the present line of Bowdoin street, one hundred seventy-four and $\frac{80}{100}$ feet; and northeastwardly by land before described as taken from Oliver Ditson, fifteen and $\frac{60}{100}$ feet; containing twenty-two hundred and forty square feet, more or less.

A parcel of land belonging to JOHN WALL, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, one hundred thirty-six and $\frac{14}{100}$ feet; southwestwardly by land hereinafter described as taken from James Jessup, twenty-four and $\frac{98}{100}$ feet; northwestwardly by the present line of Bowdoin street, one hundred twenty-

eight and $\frac{46}{100}$ feet; northwardly by the same, three and $\frac{90}{100}$ feet; and northeastwardly by land before described as taken from the Right Reverend J. J. Williams, thirteen and $\frac{51}{100}$ feet; containing twenty-six hundred and ninety-five square feet, more or less.

A parcel of land belonging to JAMES JESSUP, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, nineteen and $\frac{13}{100}$ feet, and on a curve of eight hundred thirty-eight and $\frac{80}{100}$ feet radius, fifty-six and $\frac{21}{100}$ feet; southwestwardly by land hereinafter described as taken from the heirs of Benjamin F. Brown, sixteen and $\frac{90}{100}$ feet; northwestwardly by the present line of Bowdoin street, eighty-seven and $\frac{55}{100}$ feet; and northeastwardly by land before described as taken from John Wall, twenty-four and $\frac{98}{100}$ feet; containing sixteen hundred and one square feet, more or less.

A parcel of land belonging to the HEIRS OF BENJAMIN F. BROWN, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, on a curve of eight hundred thirty-eight and $\frac{80}{100}$ feet radius, fifty-three and $\frac{62}{100}$ feet; southwestwardly by land hereinafter described as taken from John D. Reinhard, ten and $\frac{70}{100}$ feet; northwestwardly by the present line of Bowdoin street, fifty and $\frac{58}{100}$ feet; and northeastwardly by land before described as taken from James Jessup, sixteen and $\frac{90}{100}$ feet; containing seven hundred and twenty square feet, more or less.

A parcel of land belonging to JOHN D. REINHARD, bounded as follows, viz.: Southeastwardly by the proposed line of widening of Bowdoin street, on a curve of eight hundred thirty-eight and $\frac{80}{100}$ feet radius, two hundred twenty and $\frac{80}{100}$ feet, seventy-one and $\frac{92}{100}$ feet, and on a curve of one hundred seventy-nine and $\frac{40}{100}$ feet radius, eighty-eight and $\frac{30}{100}$ feet; southwestwardly by land hereinafter described as taken from James Tucker, 2d, thirty-three and $\frac{60}{100}$ feet; northwestwardly by the present line of Bowdoin street, on four

lines, sixty and $\frac{4}{100}$, one hundred forty-three and $\frac{75}{100}$, thirty-eight and $\frac{88}{100}$ and one hundred forty and $\frac{6}{100}$ feet, respectively; and northeastwardly by land before described as taken from the heirs of Benjamin F. Brown, ten and $\frac{70}{100}$ feet; containing fifty-eight hundred and ninety square feet, more or less.

A parcel of land belonging to JAMES TUCKER, 2D, bounded as follows, viz.: Eastwardly by the proposed line of widening of Bowdoin street, on a curve of one hundred seventy-nine and $\frac{40}{100}$ feet radius, eighty-nine and $\frac{98}{100}$ feet; southwardly by land hereinafter described as taken from Warren W. H. Richards, twenty-eight and $\frac{58}{100}$ feet; westwardly by the present line of Bowdoin street, one hundred twenty-seven and $\frac{37}{100}$ feet; and northeastwardly by land before described as taken from John D. Reinhard, thirty-three and $\frac{60}{100}$ feet; containing thirty-five hundred and sixty-six square feet, more or less.

A parcel of land belonging to WARREN W. H. RICHARDS, bounded as follows, viz.: Eastwardly by the proposed line of widening of Bowdoin street, on a curve of one hundred seventy-nine and $\frac{40}{100}$ feet radius, twenty-six and $\frac{24}{100}$ feet, and seventy-nine and $\frac{14}{100}$ feet; westwardly by the present line of Bowdoin street, one hundred and four feet; and northwardly by land before described as taken from James Tucker, 2d, twenty-eight and $\frac{58}{100}$ feet; containing fifteen hundred and ninety square feet, more or less.

A parcel of land belonging to NATHANIEL PHILLIPS, bounded as follows, viz.: Westwardly by the proposed line of widening of Bowdoin street, on a curve of two hundred fifteen and $\frac{80}{100}$ feet radius, seventy-nine and $\frac{10}{100}$ feet; again westwardly by said line, forty-five and $\frac{83}{100}$ feet; southwardly by land hereinafter described as taken from Mary L. Fenno, twenty-four and $\frac{50}{100}$ feet; and eastwardly by the present line of Bowdoin street, sixty and $\frac{70}{100}$ and sixty-six and $\frac{50}{100}$ feet; containing fourteen hundred and forty square feet, more or less.

A parcel of land belonging to MARY L. FENNO, bounded as follows, viz. : Westwardly by the proposed line of widening of Bowdoin street, one hundred thirty-three and $\frac{55}{100}$ feet ; northwestwardly by said line, on a curve of thirty and $\frac{87}{100}$ feet radius, forty-five and $\frac{48}{100}$ feet ; southeastwardly by the present line of Bowdoin street, seventy-two feet ; eastwardly by said present line of Bowdoin street, one hundred twenty-two and $\frac{83}{100}$ feet ; and northwardly by land before described as taken from Nathaniel Phillips, twenty-four and $\frac{50}{100}$ feet ; containing thirty-two hundred and forty-seven square feet, more or less.

A parcel of land belonging to the RIGHT REVEREND J. J. WILLIAMS, bounded as follows, viz. : Eastwardly by the proposed line of widening of Bowdoin street, on a curve of three hundred sixty-five and $\frac{55}{100}$ feet radius, thirty-seven and $\frac{86}{100}$ feet ; again eastwardly by said line, two hundred and ten feet ; southwardly by land hereinafter described as taken from Nathaniel Phillips, ten and $\frac{5}{100}$ feet ; and westwardly by the present line of Bowdoin street, thirteen and $\frac{37}{100}$ and two hundred thirty-five and $\frac{72}{100}$ feet ; containing seventeen hundred and twenty-two square feet, more or less.

A parcel of land belonging to NATHANIEL PHILLIPS, bounded as follows, viz. : Eastwardly by the proposed line of widening of Bowdoin street, on a curve of three hundred and eighteen feet radius, one hundred twenty-eight and $\frac{78}{100}$ feet ; westwardly by the present line of Bowdoin street, one hundred twenty-nine and $\frac{86}{100}$ feet ; and northwardly by land before described as taken from the Right Reverend J. J. Williams, ten and $\frac{5}{100}$ feet ; containing four hundred and seventy-two square feet, more or less.

A parcel of land belonging to ROBERT McDEVITT AND THOMAS HANEY, bounded as follows, viz. : Southwestwardly by the proposed line of widening of Bowdoin street, on a curve of twenty-five and $\frac{60}{100}$ feet radius, fifty-one and $\frac{24}{100}$ feet ; and westwardly by said line, one hundred ninety-two and

$\frac{1.0}{100}$ feet, and on a curve of three hundred and seventy-eight feet radius, one hundred thirty-two and $\frac{8.5}{100}$ feet; southwardly by land hereinafter described as taken from Cornelia H. Eliot, eight and $\frac{7.6}{100}$ feet; eastwardly by the present line of Bowdoin street, fifteen and $\frac{1.0}{100}$, one hundred twelve and $\frac{1.0}{100}$, and one hundred ninety and $\frac{6.5}{100}$ feet; northeastwardly by the same, fifty-one and $\frac{5.5}{100}$ feet; and northwardly by Union avenue, eighteen and $\frac{4.3}{100}$ feet; containing thirty-six hundred and four square feet, more or less.

A parcel of land belonging to CORNELIA H. ELIOT, bounded as follows, viz.: Westwardly by the proposed line of widening of Bowdoin street, on a curve of three hundred and seventy-eight feet radius, twenty and $\frac{2.3}{100}$ feet; again westwardly by said line, sixty-two and $\frac{6.0}{100}$ feet; southwardly by land hereinafter described as taken from Richard W. Robinson, eleven and $\frac{9.5}{100}$ feet; eastwardly by the present line of Bowdoin street, eighty-two and $\frac{8.8}{100}$ feet; and northwardly by land before described as taken from Robert McDevitt and Thomas Haney, eight and $\frac{7.6}{100}$ feet; containing eight hundred and seventy-six square feet, more or less.

A parcel of land belonging to RICHARD W. ROBINSON, bounded as follows, viz.: Westwardly by the proposed line of widening of Bowdoin street, two hundred forty-nine and $\frac{1.8}{100}$ feet; again westwardly and northwestwardly by said line, on two curves, of three hundred thirty and $\frac{6.0}{100}$ and two hundred sixty-one and $\frac{7.5}{100}$ feet radius respectively, two hundred sixty-four and $\frac{6.0}{100}$ feet; again northwestwardly by said line, seventy-five and $\frac{7.0}{100}$ feet, on a curve of two hundred seventy-eight and $\frac{6.7}{100}$ feet radius, fifty-nine and $\frac{7.7}{100}$ feet, and one hundred eleven and $\frac{9.3}{100}$ feet; northwardly by said line, on a curve of twelve and $\frac{8.2}{100}$ feet radius, twenty-five and $\frac{6.6}{100}$ feet; southwestwardly by Bowdoin avenue, twenty feet; southwardly by the present line of Bowdoin street, twenty-six feet; southeastwardly by the same, one hundred forty-four and $\frac{2.5}{100}$, ninety-seven and $\frac{1.5}{100}$, and two

hundred sixty-eight and $\frac{3.3}{100}$ feet; eastwardly by the same, two hundred eighty-two and $\frac{6.0}{100}$ feet; and northwardly by land before described as taken from Cornelia H. Eliot, eleven and $\frac{9.5}{100}$ feet; containing fourteen thousand five hundred and twenty square feet, more or less.

A parcel of land belonging to MARY A. MANN, bounded as follows, viz. : Southeastwardly by the proposed line of widening of Bowdoin street, twenty-nine and $\frac{2.0}{100}$, seven, and thirty-nine and $\frac{6.0}{100}$ feet; and northwestwardly by the present line of Bowdoin street, seventy-nine and $\frac{8.0}{100}$ feet; containing three hundred and two square feet, more or less.

AND WHEREAS due notice has been given of the intention of this Board to take the said parcels of land for the purpose aforesaid, as appears by the return hereunto annexed, IT IS THEREFORE ORDERED, that the parcels of land before described be and the same hereby are taken and laid out as a public street or way of the said city, according to a plan of the said widening made by T. W. Davis, City Surveyor, dated October 9, 1874, and deposited in his office. And this Board doth adjudge that the expense of widening the said Bowdoin street, as aforesaid, will amount to twenty-six thousand ninety-nine and $\frac{8.9}{100}$ dollars, and that the damages to the estates, parts of which are taken as above, are the sums set against them respectively on the schedule hereto annexed.

Estimate of Damages Occasioned by the Widening of Bowdoin Street, 1874.

ESTATES.	Number on the street.	Square feet of land taken.	Price per foot.	Value of land taken.	Value of buildings before widening.	Value of buildings after widening.	Value of old material to be cut off.	Damages to buildings, owners and occupants.	Total amount of damages to each estate.	Remarks.
E. P. Robinson	Bowdoin street.	4,575	45	\$2,058 75	\$300 00			\$300 00	\$2,358 75	
Unknown owners		306								
William Hannan . . .	Cor. Green st.	447	32	143 04					143 04	
Benjamin A. Brown		176	35	61 60					61 60	
Warren W. H. Richards		847	27	228 69					228 69	
Heirs of Jas. Davenport		309	27	83 43					83 43	
" "		43	27	11 61					11 61	
Heirs of Benj. F. Brown		693	27	187 11					187 11	
Eliza J. Cooper		928	27	250 56					250 56	
Heirs of Benj. F. Brown		385	27	103 95					103 95	
Frances M. Gleason		870	28	243 60					243 60	
Oliver Ditson		1,029	20	205 80					205 80	
Saint Mary's Episcopal Church		2,683	25	670 75					670 75	
Oliver Ditson	Private street.	518								
Rt. Rev. J. J. Williams		2,240	20	448 00					448 00	
John Wall		2,695	20	539 00	3,000 00	\$1,500 00		1,800 00	2,339 00	
James Jessup		1,601	30	480 30	2,500 00	1,200 00		1,500 00	1,980 30	
Heirs of Benj. F. Brown		720	27	194 40				200 00	394 40	
John D. Reinhard		5,890	27	1,590 30	2,500 00	1,200 00		1,600 00	3,190 30	
James Tucker, 2d		3,566	35	1,248 10	3,200 00	1,300 00		2,200 00	3,448 10	
Warren W. H. Richards		1,590	30	477 00	5,000 00	3,500 00		1,800 00	2,277 00	
Nathaniel Phillips . . .	Cor. Cedar ave.	1,440	25	360 00					360 00	
Mary L. Fenno	Cor. Union ave.	3,247	30	974 10					974 10	
Rt. Rev. J. J. Williams		1,722	20	344 40					344 40	
Nathaniel Phillips		472	20	94 40					94 40	
Robert McDevitt and Thomas Haney	Cor. Union ave.	3,604	28	1,009 12					1,009 12	
Cornelia H. Elliot		876	28	245 28					245 28	
Richard W. Robinson		14,520	30	4,356 00					4,356 00	
Mary A. Mann		302	30	90 60					90 60	
		58,294		\$16,699 89	\$16,500 00	\$8,700 00		\$9,400 00	\$26,099 89	

City Document. — No. 101.

CITY OF BOSTON.



REPORT OF COMMITTEE

ON

COUNTY COURT HOUSE.

1874.

IN BOARD OF ALDERMEN, Nov. 23, 1874.

Laid on the table, and ordered to be printed.

Attest :

S. F. McCLEARY,

City Clerk.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Nov. 23, 1874.

The Committee on County Buildings, who were directed to select and submit to this Board a suitable site for a new Court House, beg leave to present the following report:—

In a former report the committee stated that no argument was necessary to demonstrate the need of additional and improved accommodations for the Municipal and County Courts located in this city. The present Court House, in Court square, covers an area, on the ground floor, of about 12,000 square feet. The main portion of the building was erected between 1831 and 1836; and it was enlarged to its present dimensions by the extension of the southerly end in 1859. The rapid increase in the amount of business transacted by the Courts soon led to a demand for further accommodations; and in 1867 the City Council petitioned the Legislature for authority to take lands for the location of a new building. The necessary authority was promptly granted, and an effort was made to fix upon a site that year. The northerly end of Pemberton square seemed to be regarded with the most favor, and plans were made for the location of a building in that place; but as the matter had not been worked out in all its details at the end of the year, it was referred to the next City Council.

In 1868 the Committee on Public Buildings on the part of the Aldermen made an elaborate report in favor of furnishing the desired accommodations by remodelling and enlarging

the present building, at an estimated expense of \$191,000. It appeared, however, that the additional room furnished by the proposed alterations would only answer the requirements of the Courts for a very short time, and the project was accordingly abandoned.

No further action was taken until 1871, when, upon the earnest representations of the then Mayor, Mr. Gaston, as to the necessity of providing better accommodations for the Courts and juries, a committee of the Aldermen recommended the taking of the estates on Mt. Vernon street between Temple and Hancock streets, and the lands adjoining occupied by the Beacon Hill reservoir. Before any action was taken upon the recommendation, a communication was received from the Water Board stating that the reservoir might be required again, in case of emergency, to supply the high-service in that section of the city. The subject was thereupon referred to the next City Council. In the following year (1872), just previous to the great fire, the committee to whom the subject had been referred reported in favor of the reservoir site, so called, and stated that arrangements had been made with the Mystic Water Board, which obviated the necessity of maintaining the reservoir any longer. In view of the losses sustained by the fire of November 9th no further action was taken upon the subject during that and the following year.

This brief statement of the action heretofore taken upon the subject is sufficient to show the circumstances under which the question is presented at this time.

It is evident that any location distant from the present centre of business and the public buildings would not be regarded with favor; that being the case, the number of eligible sites is quite limited. It has been suggested by some members of the bar that suitable accommodations could be provided for many years to come, and at comparatively small expense, by closing against the passage of vehicles the

entrances from Court street into Court square, taking the buildings on the easterly and westerly sides of the square for judges' rooms, clerks' offices, etc., and remodelling the present Court House.

It appears, however, upon examination, that such an arrangement would be very expensive, and that it would be far from satisfactory to the officers of the Courts. It should be borne in mind that, if a new building is furnished, the present Court House, which is probably worth half a million dollars, can be sold or part of it occupied by the city, in connection with the City Hall, and part of it leased. A large annual expense is incurred by the city in paying rents for offices outside of the City Hall which could be more conveniently accommodated in the Court House as soon as other provision is made for the Courts.

The site to which the government of 1867 gave special attention, viz., that at the northerly end of Pemberton square, contains about 47,000 square feet. The assessors' valuation of the lands, with the buildings and other fixtures thereon, amounts to about \$500,000. It was proposed that the front of the building should be on Pemberton square, and the rear on Howard street. The grade of the street is about 20 feet lower than the square; and the plans provided for the location of the Criminal Courts in the basement, with the entrance from the street. The objections to this location were stated in the report of 1871, as follows:—

“It is of the first importance that the Criminal Court rooms should be located so as to give the freest admission to light and air. This point was dwelt upon with great earnestness by some of the judges and clerks who have had a long experience in these Courts. A large amount of space is required to accommodate the witnesses, sometimes as many as five or six hundred each day, most of them in a very uncleanly state, who are called before the Grand Jury or the Superior and Municipal Courts. In order to give a proper

entrance for such a large number of persons, and facilities for receiving and sending off prisoners, it would be necessary to widen Howard street; and the consequence would be that a large amount of heavy travel between Bowdoin square, Scollay square and Hanover street would pass over this street instead of Court street. The space allowed for showing the front of the building on Pemberton square is only about 70 feet, and a large portion of the façade would be hidden from view by the buildings on the easterly and westerly sides."

Another location was proposed on the westerly side of Pemberton square, extending through to Somerset street. The assessors' valuation of 34,550 square feet, with the buildings thereon, amounts to \$560,000. The principal objection against this site is the difference in grade between the front and rear. It would be necessary to have the building front on the square, which is from 20 to 25 feet below Somerset street, and it would be difficult, in that case, to make any satisfactory arrangements for the Criminal Courts.

The attention of this committee has been particularly directed to the site on the corner of Beacon street and Somerset street. The assessors' valuation, the present year, of a lot containing 43,432 square feet, bounded by Beacon street, Somerset street, Ashburton place, and Freeman place, is \$630,000. The valuation of a lot containing 43,619 square feet, bounded by Beacon street, Bowdoin street, Ashburton place, and Freeman place, is \$695,000. Both these sites possess advantages, and the selection of either would give satisfaction to many members of the bar. It may be objected against them, and with good reason, that the small quantity of land will necessitate the location of the building directly on the street; that the noise of passing teams, especially in Beacon street, will interfere

with the transaction of business, and that the location will necessitate the erection of a very expensive building.

The reservoir lot, which has been twice recommended by committees of the Aldermen, contains, with the estates on Mt. Vernon street, about 64,000 square feet. The estimated value of the portion covered by the reservoir (about 38,000 square feet) is \$175,000. The assessors' valuation of the seven estates on Mt. Vernon street amounts to \$227,000. Of this site the committee of 1871 say : —

"The heavy granite blocks, of which the reservoir is constructed, can be worked over, and used to good advantage in building the foundations and basement story of the Court House. If sold for removal, this material would be of comparatively little value. The distance from the City Hall to the centre of this lot is just a quarter of a mile; from Pemberton square, by way of Somerset street and Ashburton place, it is only about 1,000 feet. The distance for the conveyance of prisoners between the Court House and the jail would be reduced nearly one-half. The grade from Cambridge street, through Hancock or Temple streets, to Derne street, is easy. It is only on the westerly and northwesterly sides of the hill that the grade is steep; from all other points the place is accessible and convenient. There is no danger to be apprehended from the noise of travel in the surrounding streets. There will be a considerable space between the building and the streets; and there is no heavy travel, and never likely to be any, through these streets, as none of them are regular thoroughfares." The advantages of light and air are unsurpassed.

The objections which have been urged against the location of the Court House on this site are, that it would cause a number of wealthy residents in the vicinity to retire from their houses and possibly from the city; that it would not be easily accessible, as it is out of the line of public travel and on a very high grade; and that, being on the side of a steep

hill, the erection of a building would be attended with more than ordinary expense. Many prominent lawyers and officers of the Court have strongly favored this location, while others have as strongly opposed it. In order that there might be no misunderstanding as to the necessity for any future use of the reservoir, for supplying water either for domestic use or for the extinguishment of fires, inquiries were made of the Water Board, the City Engineer, and the Fire Commissioners, and their answers are appended.

About the only objection which can be urged against the location in front of the City Hall, between School street and Bromfield street, is the expense—and that is so large as to more than counterbalance the advantages. The assessors' valuation of about 63,000 feet, giving a front of 200 feet on the two streets, amounts to about to \$1,200,000.

Other sites have been suggested, and have been examined by the committee, but none of them possess the advantages of those which have been described. The committee have given a great deal of time and attention to the subject, and have made every effort to comply with the order of the Board; but they find themselves unable to agree, each member entertaining views different from the others. The localities favored by the committee are:—

(1.) The one on the corner of Beacon and Somerset streets.

(2.) The lot bounded by Mt. Vernon, Temple, Derne and Hancock streets.

(3.) The northerly end of Pemberton square.

While fully admitting the need of larger and better accommodations for the Courts, the committee feel some hesitation, in view of the present condition of our finances and the depressed state of business, about urging immediate action upon this matter. Under the most favorable conditions, it is hardly probable that the land and building can be provided for less than \$1,250,000 or \$1,500,000.

Having furnished all the information in their possession, the committee would respectfully submit the whole matter to the consideration of the Board.

HIRAM EMERY,	}	<i>Committee on County Buildings.</i>
JOHN T. CLARK,		
CHAS. J. PRESCOTT,		

OFFICE OF THE COCHITUATE WATER BOARD,
CITY HALL, BOSTON, Nov. 21, 1874.

JOHN T. CLARK, ESQ. : —

DEAR SIR, — In reply to yours of the 14th I will say I laid the matter before the Board, and, without expressing any opinion on the subject, they directed me to get the views of the City Engineer on the subject. I have consulted with him, and also with Mr. Jones, Supt. of Eastern Division, and Mr. Davis, Water Registrar. They all agree with me that if the Beacon Hill reservoir was not built they would not spend twenty thousand dollars (\$20,000) for all the value it would be to the water supply. There are so many connections at present, that it is scarcely possible that all will be disabled at one time.

Yours truly,

THOMAS GOGIN,

President pro tem.

OFFICE OF CITY ENGINEER, CITY HALL,
BOSTON, Nov. 20, 1874.

ALDERMAN JOHN T. CLARK : —

DEAR SIR, — In answer to your inquiry of Nov. 18th, I have to say that the Beacon Hill reservoir now serves no

purpose of importance in maintaining the water supply of this city, and that I am of opinion that it can be abandoned without detriment to the distributing system.

Respectfully yours,

JOSEPH P. DAVIS,

City Engineer.

OFFICE OF THE BOARD OF FIRE COMMISSIONERS,
CITY HALL, BOSTON, Nov. 21, 1874.

ALDERMAN J. T. CLARK : —

SIR, — In answer to your inquiry, whether the "Fire Commissioners desire to retain the Beacon Hill reservoir for the purpose of furnishing a supply of water for the extinguishment of fires," the Board have to say, that they cannot recommend the abandoning of any reservoir or supply of water, however remote may be the contingency which would cause it to be drawn on for fire purposes. At the same time they are satisfied, from the information derived from the City Engineer, that the Beacon Hill reservoir would be drawn from only in the event of the failure of the stand-pipe in Boston Highlands, and of the new reservoir recently built on Parker Hill, — a condition of affairs certainly possible, but not probable.

Respectfully yours,

ALFRED P. ROCKWELL,

Chairman.

City Document. — No. 102.

CITY OF BOSTON.



REPORT
OF THE
MEDICAL COMMISSION
UPON THE
SANITARY QUALITIES
OF THE
SUDBURY, MYSTIC, SHAWSHINE, AND CHARLES
RIVER WATERS.

CITY OF BOSTON.

To His Honor Samuel C. Cobb, Mayor of Boston:—

The Medical Commission appointed in pursuance of the following order—

IN BOARD OF ALDERMEN, June 15, 1874.

Ordered, That His Honor the Mayor be requested and empowered to appoint three physicians, who shall, at an early opportunity, examine and report upon the comparative desirability on sanitary grounds of the Sudbury, Mystic, Shawshine and Charles river waters, and that the expense of such investigation be charged to the appropriation for an additional water supply—

has the honor to submit the following

RÉPORT.

PART FIRST.

GENERAL CONSIDERATIONS.

In an investigation of the relative merits of different rivers as sources of water supply for domestic purposes, the following subjects of inquiry naturally present themselves:—

I.

Nature of the soil and configuration of the land where the rivers rise and flow.

II.

Color, taste and general appearance of the water.

III.

Sources of pollution : —

- (a) Vegetable substances.
- (b) Sewage (direct and indirect).
- (c) Drainage from cemeteries.
- (d) Manufacturing refuse.

IV.

Density of population in drainage areas, and probable future increase of the same.

V.

Chemical composition of the water.

VI.

Opportunities for storage.

The bearing of these different subjects on the general question may be considered in the order in which they have been mentioned.

I. NATURE OF THE SOIL AND CONFIGURATION OF THE LAND
WHERE THE RIVERS RISE AND FLOW.

The nature of the soil will, of course, affect the character of the water flowing through it, particularly in regard to its inorganic constituents. If the soil is rich in soluble mineral substances, these will be dissolved out, and, if they are compounds of lime and magnesia, will cause an increased hardness of the percolating water. If the soil is impregnated with the products of vegetable decomposition, these will also, as far as they are soluble, be removed by the water in its subterranean course.

Upon the configuration of the land through which a river flows depends the extent to which the adjacent country is flooded in periods of freshet, and upon the extent of this flooding and the character of the vegetation on the surface flooded depends, to a great extent, the amount of vegetable impurities which the river water contains.

In regard, however, to the nature of the soil and the configuration of the land, the four drainage areas under consideration are so far alike, that no difference in the river water, due to these causes, is likely to persist after storage has been effected in the basins provided in all the proposed schemes. This subject may, therefore, be dismissed with the above general remarks, the question of the influence of mineral and vegetable impurities on the salubrity of the water being left for future consideration.

II. COLOR, TASTE AND GENERAL APPEARANCE OF WATER.

Conclusions as to the character of water drawn from its color, taste and general appearance are liable to be very erroneous. It is perfectly possible for water to be polluted in a way to render it entirely unfit for domestic purposes, and yet to sight and taste give no evidence of this pollution.

As an instance of this sort of contamination, may be mentioned the condition of the well-water of the Bay View House, the hotel at Mt. Desert, where typhoid fever prevailed in the summer of 1873. The water was described by the physician who collected it on the spot as "clear and sparkling;" yet, when submitted to analysis some weeks later, it was, in the words of the chemist who examined it, "very turbid, the sediment appearing white when in suspension, but after settling it had a light brown color. Its odor was vile, resembling that of bilge-water, and the presence of sulphuretted hydrogen was easily distinguishable. . . . The amount of sediment was so great as to render a layer of the water one inch in thickness non-transparent, and a

microscopic examination revealed in it the presence of ordinary animalculæ, vibriones and fungi, such as are seen in liquids containing decomposing organic matter. The above examination, although very hastily performed, gives results which prove beyond a doubt that the water is totally unfit for drinking purposes, and that it must be contaminated in some manner by drainage. The sulphuretted hydrogen must have been formed by the decomposition of some organic material which contains sulphur, such as albumen, and its presence is in itself sufficient evidence of the pre-existence of such organic material in the water. The sediment and vile odor were developed by decomposition of the organic matter contained in the water after its introduction into the vessel.¹

It would be easy to multiply cases of this sort, but it will be sufficient to mention an instance furnished by our own investigations. The water of Angle brook, one of the tributaries of Sudbury river, appeared to us, at the time of our visit, remarkably pure and agreeable to the taste; yet the chemical analysis indicates that, in all probability, the sewage of the growing town of Marlboro finds its way into it.

Although our unaided senses do not always enable us to detect pollution from sewage, yet in some other respects the color and general appearance of water is a more trustworthy indication of its composition.

Almost all rivers flowing through a fertile country have, especially in summer and autumn, a more or less earthy taste, and a brownish-yellow color, which, to a great extent, disappear by storage in large lakes, though it is impossible, in the present state of our knowledge of the movements of underground water, to decide how far this is due to a change in the river-water itself, and how far it is dependent on a dilution of the river-water with a purer water filtered through the soil and entering the lake by underground channels.

Whatever may be the precise nature of the substance which

¹ Boston Med. and Surg. Journal, vol. 89, p. 494.

gives its brownish-yellow color to river-water, it is undoubtedly of vegetable origin, and probably a product of vegetable decomposition; but to what degree its presence renders the waters unwholesome is a question yet to be decided. As above stated, the color disappears more or less completely on storage, though the nature of the process producing this change has not been satisfactorily determined.

An account of some experiments, made with a view of determining upon what constituent of river-water its color depends, and also in what way storage affects the color and chemical composition of water, will be found in Appendix B.

III. SOURCES OF POLLUTION OF RIVERS.

Rivers are polluted by refuse materials derived from vegetation, population and manufactures. Such materials may be mineral, vegetable or animal, or combinations of these; they may be received by the water-courses fresh and unchanged, or in process of conversion, or already converted, to inorganic and perhaps innocuous chemical compounds, or they may be in various stages of decomposition and putrefactive decay. The degree of contamination, other things being equal, will depend upon the directness with which the waste materials are poured into the streams, being greatest in direct or pipe-drainage, and least in percolation through the natural soil. Between these two extremes lie various artificial modes and natural channels of conveyance.

The following classification presents in more detail the various sources of pollution:—

1. Vegetable substances.

- (a) Aquatic and terrestrial growths.
- (b) Peaty deposits.
- (c) Parts of manufacturing refuse.

2. Sewage:—

- (a) Human excreta and kitchen slops. These are animal, vegetable and other material.

- (b) Wash-house slops, containing soap, and animal matter from soiled linen.
 - (c) Drainage from slaughter-houses ; animal matters and some vegetable.
 - (d) Drainage from stables, cow-houses and piggeries, — animal and vegetable.
3. Drainage from cemeteries.
4. Manufacturing refuse, — from
- (a) Tanning and currying establishments.
Glue and glue-stock factories.
Paper-mills.
Wool-scouring establishments.
Woollen, shoddy and felting-mills.
 - (b) Cotton, batting, thread and twine factories.
 - (c) Dye, print, bleach and paint works.
Chemical works and soap-factories.
Gas works.
 - (d) Saw, grist and emery mills, cabinet, tool and machine-shops, and various other works not elsewhere mentioned.

Inasmuch as the special treatment of each one of these sources of contamination does not come within the scope of the present inquiry, and as it may be assumed that the specific differences of works of the same name in eastern Massachusetts will not materially affect the main question, it will be sufficient to state broadly that, of all the kinds of refuse enumerated or implied in the above list, sewage, as containing human excreta, is the one most to be feared. Similar in kind, but less in degree, are the washings of house-linen and the filthy rags supplied to paper-mills. Next in order, but of a different kind, are waste liquors containing animal mat-

ters, especially animal matters in a state of decomposition. Pre-eminent among these are the tanneries, whose waste liquors are said to possess from five to ten times the manurial power of average sewage, and following upon these at greater or less distances are the glue factories, wool-scouring establishments, the shoddy and woollen mills and soap works. Others are principally dirty or offensive; while dye and chemical stuffs form the principal pollution of a large class of works and enter secondarily into the waste products of many other industries. Cemeteries may be classed with decomposing animal matters, leaving for future study to determine the question whether the drainage of these places is a bearer of specific poisons.

It is plainly desirable, on sanitary grounds, to avoid the admission to drinking water of any kind of filth or refuse matter. Let authorities differ as to what constitutes pollution, and as to the degree and kind of danger to be apprehended from a particular sort, they are in the main agreed that the contaminations which ordinarily occur may impair health and predispose to disease, even if they do not produce a direct and specific effect. It is not safe to say that "filth is only matter in a wrong place," without recognizing the occasionally fatal consequences of such malposition.

Dr. F. Fischer, in his pamphlet on "Drinking-water," etc., Hannover, 1873, says:—

"Although no perfect unanimity of opinion is as yet reached,—inasmuch as some ascribe to water only a *predisposing* influence,—it is agreed that the spread of cholera and other diseases is somehow connected with drinking-waters. Already, wherever radical reforms in the matter of water-supply and sewerage have been introduced, have appeared, *pari passu*, improvement in the general health, lessening of mortality, and marked abatement of infectious epidemic diseases and epidemics.

"Moreover, the possibility of drinking bad water without

getting typhus or cholera needs not to be argued. Bad air, spoiled water (where these, perhaps, have not taken up the infectious material itself) have only a predisposing effect. They weaken the power of resistance to infection."

The late Secretary of the State Board of Health (Report of 1871, p. 178) says:—

The single continuous thread of probability which we have been able to follow in this inquiry leads uniformly to the *decomposition of organized* (and chiefly vegetable) *substances* as the cause of typhoid fever as it occurs in Massachusetts.

"Whether the vehicle be drinking-water made foul by human excrement, sink-drains, or soiled clothing; or air made foul in enclosed places by drains, decaying vegetables, or fish (Swampscott); or old timber (Tisbury); or in open places by pigsties, drained ponds, or reservoirs, stagnant water, accumulations of filth of every sort,—the one thing present in all these circumstances is decomposition."

There is a very general opinion, especially strong in England, that the drinking of water containing sewage, which has become impregnated with the discharges of persons suffering from cholera or typhoid fever, is capable of reproducing either of those diseases respectively; and even that specific contamination of the sewage is not a necessary condition to the production of typhoid fever, dysentery, diarrhœa, scarlatina, and some other diseases.

Surgeon Major A. C. C. De Renzy, Sanitary Commissioner, Punjab, writing on the extinction of typhoid fever in the Millbank prison, by the disuse of Thames water, feels warranted in saying ("Lancet," 1872, Vol. I., p. 821):—

"That, since some of the ablest physicians in London failed for many years to detect the true cause of the unhealthiness of Millbank prison, and assigned causes for it which later experience has found to be unconnected with it, the probability is that a similar error is frequently made

elsewhere, and that the prevalence of some zymotic diseases is ascribed to locality, malaria, heat, cold, variations of temperature, moral depression, and other intangible influences which could be entirely removed by the general disuse of impure water."

"That, as it required long years of observation to establish the noxious influence of Thames water in Millbank, even when well filtered, under conditions very favorable for detection, we should be cautious in accepting the opinion, based on the results of chemical analysis, that the use of that water by the population of London is free from danger."

Wm. Budd, M.D., F.R.S., in his work entitled "Typhoid Fever, its Nature, Mode of Spreading, and Prevention," 1873, says:—

"Now I have no difficulty in at once giving my opinion that *all* the emanations from the sick are, in a certain degree, infectious. At the same time, it is one of the principal objects of the work to show that what is cast off from the intestines is incomparably more virulent than anything else."

Mr. J. Simon, F.R.S., Medical Officer to the Privy Council, and Surgeon to St. Thomas' Hospital, in giving evidence before the Royal Commission on Water Supply of London, said:—

"I think that where the population of any town shows a considerable amount of diarrhœa, and also of typhoid fever, it makes one believe that there must be some impurity in the water at times, and the health of the people as regards those diseases of the intestine seems to be very much influenced by the purity or impurity of its water-supply (p. 73)."

"Q. But you have not been able in all those cases of suspicion [cholera in London] to trace the cause of the evil which has arisen from the use of those waters?

"A. There are certain organic matters in water, peaty matters, for instance, as to which I do not know, of my own

knowledge, that they do any harm. I think it would be safer, that it should be without any organic admixture. But with regard to some of those matters we do know that they do harm. The water which has done very great harm in London on various occasions, as we believe, has been water conveying what, by a figure of speech, I may call the actual seeds of specific disease. Chemists cannot identify those seeds. What one has to do is to guard the supply with utmost strictness against every foul admixture. It should be made an absolute condition for a public water-supply, that it should be uncontaminable by drainage."

Dr. R. A. Smith, in the same report, says, "It is not the mere amount of organic nitrogen that is of the greatest consequence, but the condition of that matter, whether it is in a state ready to putrefy or give out germs of life, vital forms. If there is neither putrefaction nor vitality, I do not see how it can affect us."

The water-supply should be "uncontaminable by drainage." There is no demonstrable safety in a middle course. No one has conclusively shown that it is safe to trust to dilution, storage, agitation, filtration or periods of time for the complete removal of disease-producing elements, whatever these may be. Chemistry and microscopy cannot and do not claim to prove the absence of these elements in any specimen of drinking-water. They discover pollution; and pollution is somehow intimately associated with the production of certain diseases. Our germ, fermentation and other theories indicate our actual ignorance of the ultimate nature of that cause or those causes whose action we nevertheless rightly infer. These deductions from the observations of cases and their surroundings have been so often repeated that we cannot afford to disregard them. The proof is especially strong of the influence of sewage contamination of city wells upon the health of those using the waters. Chemistry in these cases has been invaluable in pointing out the fact and

source of contamination ; but it has not indicated the quantity and quality of the specific cause. This may not be susceptible of dilution or oxidation. In order, therefore, to feel sure that our drinking-water is healthy, it is correct, so far as our sanitary knowledge extends, to exclude wholly every species of contamination, however difficult, practically, this may be declared to be.

In this connection we present the testimony of the Rivers' Pollution Commission, First Report, Vol. I., 1870, p. 113 :—

"The importance of the history of water as regards its anterior pollution with organic matters of animal origin does not arise from the presence of the inorganic residues (nitrates, nitrites and ammonia) of the original polluting matters, for they are in themselves innocuous ; but from the risk lest some portion of the noxious constituents of the original animal matters should have escaped that decomposition which has resolved the remainder into innocuous mineral compounds. And the danger is the more to be feared because it is quite impossible by chemical analysis, or indeed by any other process of investigation short of administration of the water to human beings, to discover whether or not such noxious substances are still left in the water. We cannot but regard this risk as considerable, whatever may be the nature of the noxious ingredient in excrementitious matters, but if we are to accept the theory which is now prevalent amongst many physiologists who have closely studied the subject of the spread of epidemic and infectious diseases, that these diseases are propagated by minute zymotic germs, the danger becomes much augmented on account of the great resistance which such organic and living germs oppose to the oxidizing agencies which gradually decompose and destroy dead organic matter. That this is no imaginary danger is evident from the numerous outbreaks of typhoid fever and cholera which have been distinctly traced to the drinking of water previously polluted by

excrementitious matters, but in which chemical analysis failed to detect any noxious ingredient." . . .

In his evidence before the Royal Commission on Water Supply, Mr. Simon, F. R. S., thus expresses his opinion on this subject:— . . .

"Q. Supposing that sewage is discharged from one of the sewers, say at Windsor, would it be possible to detect the presence of that sewage seven miles lower down the river, having regard to the volume of water in the river?

"A. I believe it would be absolutely impossible for chemists to discover it; but the practical sanitary question is different. Supposing tape-worm eggs to be sent into the river with that sewage, would those tape-worm eggs be alive seven miles down? Or supposing cholera discharges to be sent into the river, or the discharges of typhoid fever, and assuming (which is a frequent pathological opinion) that the respective contagia of typhoid fever and cholera are living germs, would those germs be alive seven miles down? It is not a question whether a chemist would find out the organic matter so much as it is a question whether those particular molecules would still have their property seven miles down. I cannot say that they would not.

"Q. Could you detect them at that distance?

"A. Only by their effects.

"Q. Might not the same disease be produced from any other cause?

"A. The particular parasite will only come from its particular egg. You could not get hydatids except from eggs any more than you could get chickens without eggs.

"Q. If it is not possible for a chemist to discover sewage, is it not presumptive evidence either that it does not exist, or that, if it does exist, it is in such minute quantities that it is in no way deleterious to human health?

"A. I am very decidedly of opinion that that principle is not

a safe one to adopt as a basis for sanitary regulations in the matter. . . . I think the drinking of such water is dangerous. It is not practicable to define the exact line at which the danger in a particular case begins. Everybody knows that water with certain obvious pollutions by sewage is fatal to health, and I do not know where to draw the line in practice between such cases and those which are, practically speaking, unimportant."

Sir Benjamin Brodie, Bart. (Rivers' Pollution Commission, First Report, River Thames, Vol. II., Minutes of Evidence, page 49), says, in effect:—

"I should say that it is simply impossible that the oxidizing power acting on sewage running in mixture with water over a distance of any length is sufficient to remove its noxious quality. . . . I presume that the sewage could only come in contact with the oxygen from the oxygen contained in the water, and also from the oxygen on the surface of the water; and we are aware that ordinary oxygen does not exercise any rapidly oxidizing power on organic matter. I believe that an infinitesimally small quantity of decayed matter is able to produce an injurious effect upon health. Therefore, if a large proportion of organic matter was removed by the process of oxidation, the quantity left might be quite sufficient to be injurious to health. With regard to the oxidation, we know that to destroy organic matter the most powerful oxidizing agents are required; we must boil it with nitric acid and chloric acid, and the most perfect chemical agents. To think to get rid of organic matter by exposure to the air for a short time is absurd."

The Commission before whom the above testimony was given summarize the results of their thorough investigation into the alleged self-purification of polluted rivers as follows:—

"Thus, whether we examine the organic pollution of a river at different points of its flow, or the rate of disappear-

ance of the organic matter of sewage when the latter is mixed with water and violently agitated in contact with air, or, finally, the rate at which dissolved oxygen disappears in water polluted with five per cent. of sewage, we are led in each case to the inevitable conclusion that the oxidation of organic matter in sewage proceeds with extreme slowness, even when the sewage is mixed with a large volume of unpolluted water, and that it is impossible to say how far such water must flow before the sewage matter become thoroughly oxidized. It will be safe to infer, however, from the above results [referring to actual experiments previously detailed], that there is no river in the United Kingdom long enough to effect the destruction of sewage by oxidation."

While the medical journals of the past few years abound with examples of disease ascribed to admixture of sewage with drinking-water, the cases are rare which can be distinctly traced to some form of manufacturing refuse. This does not necessarily imply a radical difference between the two classes of pollution, as might at first sight appear, although such difference may exist; but it is the result, rather, of the fact that sewage, while often constituting the sole contamination of water, rarely fails to accompany all other forms of pollution, and thus to complicate the results of observation upon them. The waste from factories being usually more or less associated with sewage, whether in subsoil waters or in streams, cannot easily be distinctively accused of causing an outbreak of disease which happens in the immediate neighborhood. But we can anywhere find a community whose supply of drinking-water may demonstrably contain sewage and at the same time be wholly free from suspicion or possibility of other contamination. We may best study that part of manufacturing refuse whose chief objectionable quality is the presence of putrescible organic, i. e., animal, matter, which is also the chief character of most sewage, by observing, not

the factories and their streams, but the pure well water occasionally the recipient of some dead animal.

Alfred Carpenter, M. D., Lond., has apparently traced some outbreaks of scarlatina to air contaminated by decaying slaughter-house refuse spread upon the ground, and in this connection has raised the question of danger from the presence of blood in sewers. Slaughter-house refuse and scarlatina have been associated by other observers as having possibly the relation of cause and effect. Dr. Edward Smith, in his book on "Foods" (1874, p. 308), says: "An instance was recorded by us, many years ago, in which a very violent type of scarlet fever was associated with drinking water from a tank in which herrings in a state of decomposition were found."

Examples of this sort might be multiplied and testimony accumulated in support of the general proposition that manufacturing refuse renders water unfit to drink. But we practically condemn the admission of all filth without waiting for scientific reasons or demonstrative proof. That which is in any way offensive to the sight, taste or smell, or the sense of decency or propriety, has no more right to a part in the composition of our drinking-waters than those substances which are actually proved to be deleterious to health. The effect of some forms of manufacturing refuse upon the lower animals is worthy of notice. It is well established that tanneries, paper-mills and gas-works kill and drive off fish, and it is a fair inference that various other works discharging mineral or putrefactive substances have a like effect (see first report of Commissioners, etc.—River Thames, 1866, Vol. II.), notwithstanding certain species of animals seek out and thrive upon some forms of filth. The effect upon vegetable life, on the other hand, is no evidence of the purity or impurity of a water-supply. Sewage in some situations may cause a rank growth, while in others it kills. The long grass in the bed of the Charles, at Careyville, has apparently thriven upon it

occasional bath of dyestuffs from the shoddy-mill just above. If we recognize the principle upon which aquaria are managed, we shall not be surprised at such results, nor be in danger of drawing a false inference from rank vegetable life of the effect of a particular form of pollution upon the health of mankind. In those cases where vegetation suffers or disappears, or where all forms of vitality seem overborne, we may reasonably infer serious contamination.

Judging by a series of experiments performed by Dr. F. Crace Calvert and reported by him at a meeting of the Association of Medical Officers of Health, London ("Lancet," 1872, Vol. I., p. 129) there is little hope of the accidental destruction, by the discharges from chemical works, of low forms of organic life, such as may be associated with putrefactive changes. "Chloride of lime, or bleaching powder, instead of stopping, actually promoted the decomposition of the albumen liquid — vibrios were found in great abundance, but no fungi. . . . Acids promoted the formation of fungi, particularly the sulphuric and acetic. Alkalies promoted the formation of vibrios, and prevented the growth of fungi. Soda produced little or no effect. Ammonia and lime promoted the putrescence and had very little effect on the microscopic life."

A comparison of the natural advantages of the four drainage areas for the proper disposal of sewage and manufacturing refuse, being largely concerned with the question of relative expense, belongs to the present report only in its sanitary aspects. It may be safely said, that the most complete, and, therefore, the safest removal of the various forms of pollution is attainable only by a system of town sewerage terminating outside the valley whose waters we wish to protect; that next in order of thoroughness is a system of sewerage terminating in such way as to give opportunity for irrigation combined with filtration, and preferably intermittent filtration, through the largest possible extent of natural soil; and,

finally, that it is not safe to trust to the filtering and purifying power of the soil in the neighborhood of streams even where soakage altogether takes the place of surface or other drainage.

Sir Benj. Brodie, Bart., Professor of Chemistry at Oxford, gave the following testimony before the Royal Commission on Water Supply of London:—

"Q. What course do you consider the most efficacious one to get rid of the sewage contamination from the towns on the river?

"A. The best is, not to put the sewage with the river at all. That is the best answer I can give, and indeed that is the only course by which you can be certain you have not got it in. I certainly do think it a very good thing to employ the processes used for the filtration and destruction of sewage, and they are, *pro tanto*, beneficial. They really help the matter a good deal, but I do not think they are entirely effectual. There is no known process that I am aware of for, on a large scale, destroying the injurious quality of sewage."

The "Lancet". (Lond.), in an editorial (1872, Vol. II., p. 46), says:—

"Loose porous soil—such as gravel or broken chalk—is not only more liable to drainage contamination, but affords a more imperfect filter than closer soil. Very shallow porous soils are often exceedingly foul from the stagnation and accumulation in them of manurial matters. The dip of the land is also an important element in the study. A cesspool below a well on a hill-side may not pollute the water; but if above, the water will be almost sure to suffer. A short time ago we analyzed the water of two wells, one at the bottom, and one near the top, of the same hill. The former showed almost exactly three times the amount of contamination of the latter."

The same journal, speaking of natural filtration (editorial, 1872, Vol. I., p. 370), says:—

"There is all the difference in the world between filtration through a bed of chalk 500 feet thick, and filtration through 20 feet of loose gravel, saturated already with the foul soakage of middens, farm-yards, and factories. These are the extremes. Between them lies an infinite series of possible cases."

In "The Report upon the Sanitary Condition of the Districts of the Combined Sanitary Authorities of Oxfordshire, by Gilbert W. Child, Officer of Health to the above Authorities," quoted in the "Lancet," 1874, Vol. I., p. 841, it is stated that, at Charlbury, in consequence of the escape of the contents of a barrel of petroleum or benzoline, which had been buried in an orchard, a circuit of wells, 60 feet below and 250 or 300 yards distant, became so affected that the occupiers of 15 houses, containing 82 inhabitants, were, for 10 days, unable to use the water for drinking or cooking. The cattle of one of the proprietors, moreover, refused to drink at the spring where they were accustomed to drink." "The hole, in which the cask was buried, must have been immediately over the head of the spring which supplied the wells." "Had this soakage been sewage instead of petroleum, who can doubt that the result might have been wholesale water-poisoning, and an outbreak of typhoid fever?"

The polluted well at Mt. Desert, referred to elsewhere in this report, must have derived its contamination from a cess-pool up the hill, and on the opposite side of the hotel. The sewage must have taken a subsoil course, either about the house or beneath its cellar.

"The careful investigations which have been made in Berlin indicate that the subsoil waters are constantly moving towards the river." (Dr. Fischer, *op. cit.*)

The view which now prevails with regard to subsoil waters is, that, having no remote and mysterious origin in the bowels of the earth, they are neither independent of surface conditions nor inexhaustible; but are simply derived from

the rainfall and dew of the natural basin, or drainage area, in which they occur. It follows that springs are but the outcropping and overflowing lip of a natural basin, and that the rivers represent the hydrostatic level of the subsoil waters of a drainage area. There is, then, one round of changes; evaporation, condensation, and flow, upon or beneath the surface of the soil, towards and with the visible streams.

We have quoted various isolated examples and statements with which this general view of subsoil waters is entirely in accord. It would seem, therefore, that the undrained towns, factories, and houses of a drainage area may pollute the streams even when not situated directly upon them.

The foregoing considerations, in which an attempt has been made to give expression to the most definite views which we have been able to collect from trustworthy authorities, embrace the following principal points:—

First. The danger to health from the pollution of drinking-water.

Second. The impossibility of demonstrating the absence of danger by an examination of the water.

Third. The difficulty of purifying a stream once polluted.

Fourth. The polluting effect of undrained towns by the agency of subsoil waters.

These points indicate the necessity of treating the various forms of pollution by strictly preventive measures, the relative cost of which in the several drainage areas is a question for engineers to decide; also, the absolute value of estimates of population and manufactures, as sources of pollution, and, to some extent, the relative value of such estimates for the varying condition of towns as to drainage and proximity to water-courses.

IV. DENSITY OF POPULATION IN DRAINAGE AREAS AND PROBABLE FUTURE INCREASE OF THE SAME.

The density of population in a given drainage area may, in a general way, be regarded as a measure of the extent to which the rivers are likely to be polluted by sewage and refuse. The mode of distribution of the population will, however, affect any conclusions drawn from data of this sort. A population collected chiefly in cities or large towns provided with sewers opening directly into the rivers will, of course, pollute the water far more than the same population scattered more uniformly over the country. But when a comparison is to be made between several drainage areas in which the *distribution* of the population is essentially the same, then its *density* will furnish a tolerably accurate criterion of the danger likely to arise from contamination of the water by sewage and refuse.

Moreover, when a river has been selected as a source of water-supply for a city, it is of the highest importance that all direct sewage and manufacturing refuse of a deleterious nature should be excluded from its waters. A knowledge of the density of the population in the river valley will then be valuable as indicating the probable amount of pollution from indirect sewage and other sources of contamination against which no legislation can guard.

It will be seen that the four rivers under consideration differ greatly from each other in this respect.

Were it possible to determine the future rate of increase of population in any given drainage area, we should be able to pronounce with much greater positiveness upon the advisability of using its rivers as a source of water-supply.

This, however, can only be done in a very general way by a consideration of the rate of growth of population in past years and of the industries practised in the drainage area in question. In this respect, too, it will be found that there is

a great difference in the probable future of the four drainage areas under consideration.

V. CHEMICAL COMPOSITION OF THE WATER.

The object of a chemical analysis is to determine, as far as possible, the presence of an injurious amount of those substances in water, which are believed or are known to be deleterious to health. In the present state of chemical science, however, it is impossible to isolate them and determine their nature with certainty, as can be done in the case of the poisonous metals, — arsenic and antimony, for instance. They are chiefly in the form of complex organic substances, so that the chemist is obliged to resort to various processes by which they can be decomposed, and to measure or weigh the products of such decomposition, in order that he may be able to form only an approximate idea of the amounts of these substances present. Or, he can determine the amount of some innocuous compound, which is almost always associated in water with substances which are injurious.

In the report of the "Royal Commission on Water Supply of London" (p. xciii.), we find the following statement: —

"Where a minute quantity of organic matter escapes destruction (by the processes of oxidation, etc.), it would seem that chemistry is not yet sufficiently advanced to pronounce authoritatively as to its exact quality and value." And in the minutes of evidence before the same commission, Mr. Simon, F. R. S., medical officer to the privy council, says, "I mean that the question of good supply or bad supply is not to be judged only by what the chemists, from their laboratories, can tell you of the water. The greater part of the water-supply of London, as you are aware, is pumped from the Thames. That portion is taken from the Thames after one million population has drained into the river. Nothing which chemists, in the present state of their science, can report negatively as to their findings in the London water will

alter the fact of that filthy admixture, and I know that that fact represents a certain amount of danger to the population that receives the water."

The same high authority, in answer to the question, "If it is not possible for a chemist to discover it (sewage contamination), is it not presumptive evidence that it does not exist, or that, if it does exist, it is in such minute quantities that it is in no way deleterious to human health?" says, "I am very decidedly of opinion that that principle is not a safe one to adopt as a basis of sanitary regulations in the matter. I think that the rule ought to be, that no sewage should go into any water that can be used for drinking purposes. Water into which sewage has been discharged is, in relation to the matter now under consideration, an experiment on the health of the population, and I do not think that that experiment ought to be tried."

Sir Benjamin Brodie also considers it impossible for chemists to tell just where the sewage disappears in water, or whether it ever disappears or not.

Such being the case, it is very evident that small amounts of such impurities as may be capable of propagating the most virulent diseases *may* readily escape detection by chemical tests.

The principal injurious substances found in water belong, as before mentioned, to the class of organic compounds, which are made up of different proportions of two or more of the elements, carbon, nitrogen, hydrogen and oxygen. The various methods for estimating the amounts of the organic impurities in water are based upon the determination of the nitrogen and carbon, or of the nitrogen only. Of these different processes, that proposed by Wanklyn and Chapman has been adopted as the best one yet perfected for the estimation of the nitrogenous substances.

This method consists: First, in boiling the water with a little carbonate of sodium, in order to separate the free am-

monia, which gets into the water chiefly by the decomposition of the organic matter, although a very small amount is absorbed from the air and is found in rain-water; and, second, by converting the remaining nitrogen, which is in combination with other elements in the organic matter, into ammonia by boiling it with a strongly alkaline solution of potassic permanganate. This latter is called the "albuminoid ammonia," to distinguish it from the free ammonia first expelled, since all of the nitrogen in albumen can be thus converted into ammonia.

Another method for estimating the amount of organic matter is by evaporating a certain amount of the water to dryness and igniting the residue, so as to burn off the organic compounds. The difference between the weight of the residue before and after ignition is the weight of the organic substances. Other volatile substances, however, are expelled besides the organic, so that this weight is termed the "organic and volatile," and is always greater than that of the organic compounds properly so called. This method alone, therefore, is not sufficiently accurate for the determination of the organic substances.

In drawing conclusions from the amounts of organic matter present in water, careful distinction must be made between the organic matter of vegetable and that of animal origin, the latter being much the more deleterious. It is a well-received fact, that decomposing animal matter in drinking-water is a fertile producer of intestinal and other diseases. Thus Dr. Wolf¹ gives a large number of cases, which prove conclusively, that bad water produces diarrhoea, and can propagate dysentery, typhoid fever, and cholera, and that such water is frequently clear, fresh and very agreeable to the taste.

Vegetable matter, on the other hand, forms a large part of our ordinary food and drink, and, except when in a state of

¹ *Der Untergrund und das Trinkwasser der Städte.* Erfurt, 1873.

putrefaction, does no injury unless taken in large amounts. Dr. Frankland, in reply to a question asked by the London Water Commission, says, "As far as we know, the presence of organic nitrogen in the form of vegetable organic matter, such as peaty matter, is innocuous unless contained in considerable quantity in water; but when contained in the water in the form of sewage matter, it is believed to be noxious."

Dr. Lyon Playfair, in evidence given before the same commission, says, "The effect of organic matter in the water depends very much upon the character of that organic matter. If it be a mere vegetable matter, such as comes from a peaty district, even if the water originally is of a pale sherry color, on being exposed to the air in reservoirs, or in canals leading from one reservoir to another, the vegetable matter gets acted upon by the air and becomes insoluble, and is chiefly deposited, and what remains has no influence on health. But where the organic matter comes from drainage, it is a most formidable ingredient in water, and is the one of all others that ought to be looked upon with apprehension when it is from the refuse of animal matter, the drainage of large towns, the drainage of any animals, and especially of human beings."

Dr. Ferd. Fischer¹ says, "Organic matters are in themselves harmless; our artificial drinks, and many articles of food, contain them. Yet how dangerous even very small quantities may prove under certain circumstances is shown in dissecting wounds, malignant pustule, etc.

"That a person can drink bad water and not immediately be affected with typhoid fever and cholera is very evident. Bad air and polluted water (if it does not contain contagious matter itself) act as predisposing causes; they render the system less capable of withstanding infection.

¹ *Das Trinkwasser*, Hannover, 1873.

"If a pure drinking-water is necessary in ordinary times, in times of epidemics it is all the more important."

Animal matter or sewage always contains a large amount of chlorine in the form of common salt, which is an abundant constituent of the animal fluids and tissues. Hence the determination of chlorine in water is very important, as showing probable contamination with sewage. If a water contains a large quantity of sewage, it will contain a proportionally large amount of chlorine. Animal or sewage contamination does not, however, afford the only means by which chlorine can find its way into running streams; it can also be derived from manufacturing establishments where a large amount of salt is thrown away with the refuse. The presence of a considerable amount of chlorine in water, therefore, does not necessarily prove animal contamination.

Natural waters, which are not contaminated with sewage, contain a minute amount of chlorine, those located near the sea-coast containing a larger proportion than inland waters.

The following tables give the amount of chlorine in many of the best drinking-waters of Europe, and in certain suspicious waters. (Extracted from Edward Smith's work on "Foods," p. 300.)

In Good Drinking-Waters.

LOCALITY.	CHLORINE. (Parts per 100,000.)	LOCALITY.	CHLORINE. (Parts per 100,000.)
Bassenthwaite Lake	1.29	Rhine	0.20
Buttermere	0.89	Rivington Pike	0.53
Cocker	1.09	Rydal Lake	0.69
Crawley Burn	1.04	Severn above Newtown .	1.35
Crummock Water	0.89	Skiddaw	1.09
Derwent Water	1.29	Swanston Water	1.39
Derwent	1.09	Windermere	0.99
Ennerdale Lake	0.99	Lake Zug	0.27
Grassmere Lake	0.79	Lake Zurich	0.17
Kent	0.90		

In Certain Suspicious Waters.

LOCALITY.	CHLORINE. (Parts per 100,000.)
Liverpool — Bevington Bush well	12.61
“ — Soho well	7.51
“ — Water Street well	7.94
Congleton — Town pump	3.18
Rochdale — Spring near churchyard	2.98
Kidderminster — Shallow well	8.38
“ — Another well	8.20
Leamington — Private well	14.20
Durham — Private well	9.75
Darlington — Blackwell pump	8.45
Kendall — Shallow well	17.00
Witney — Private well	22.90

Besides the chlorine, free ammonia invariably accompanies decomposing animal matter in sewage. Urea, the principal organic constituent of urine, is very rapidly transformed into ammonia and carbonic acid. Hence the presence of a large amount of both free ammonia and chlorine in water generally indicates sewage contamination, and that such water is unfit for domestic purposes. “Albuminoid ammonia” can be obtained from vegetable as well as animal matter, and when a water contains a considerable quantity of it without at the same time containing an excess of free ammonia and chlorine, it is presumptive evidence that vegetable organic matter only is present.

The following tables give the amounts of free and “albuminoid” ammonia in various good town waters, and in certain suspicious waters. (Extracted from Wanklyn and Chapman’s “Water Analysis.”)

Free and "Albuminoid" Ammonia in Good Town Water.

LOCALITY.	Parts per 100,000.	
	Free Ammonia.	"Albuminoid" Ammonia.
Manchester town water	0.001	0.006
Edinburgh town water	0.000	0.007
Glasgow (Loch Katrine) town water	0.000	0.008
Chester (Dee) town water	0.000	0.007
Scarborough (Yorkshire) town water	0.001	0.006
Oxton (Birkenhead) town water	0.000	0.002
Chelmsford (Essex) town water	0.008	0.002
Leek (Staffordshire) town water	0.000	0.002
Filde Water-works, Lytham, in Lancashire	0.000	0.010
New Supply to Guildford, Surrey	0.000	0.001

Free and "Albuminoid" Ammonia in Various Suspicious Waters.

LOCALITY.	Parts per 100,000.	
	Free Ammonia.	"Albuminoid" Ammonia.
Well at Leek Workhouse	0.002	0.034
Great St. Helen's Pump, London	0.375	0.018
Pump in Bishopsgate Street, London	0.750	0.025
Pump in Draper's Hall, London	0.600	0.031
Pump in Edinburgh	0.021	0.020
Well in Windsor	0.120	0.008
Well in Eton	0.000	0.084
Effluent from Sewage	1.620	0.090

Hardness.—Some of the inorganic compounds, especially the lime and magnesium salts, have been said to have con-

siderable influence upon the health of the people drinking water which contains them. These are the substances which impart to water the property termed hardness.

There is a great difference of opinion among scientific men as to the deleterious or non-deleterious action of hard waters upon the system. Letheby and Wilson consider that hard waters are clearer, cooler, richer in atmospheric air, and less likely to hold organic substances in solution or to contain living organisms, than soft waters. They say also, that hard waters help to furnish the lime and magnesium salts necessary for the support of some of the animal tissues; a much larger amount, however, of these is obtained from our ordinary articles of diet, so that their presence in drinking-water is not necessary for this purpose.

In a report of Dr. Letheby's, we find, that in some of the English towns the mortality appears to be in inverse proportion to the hardness of the waters used. Thus, in London and twenty-four other English towns the hardness is 16° , while the death-rate is 21.9 per 1,000; in Edinburgh, Leith and several other places the hardness is 8° , and the death-rate is 24.9 per 1,000; in Dundee, Glasgow and others where the hardness is only from $1^{\circ}.3$ to $3^{\circ}.8$, the death-rate is 26.1 per 1,000.

It would seem, from these statistics, that the hardness has a very beneficial effect upon the health of the community, but on the other hand Berlin is supplied with water of from 14° to 61° of hardness, and has an average death-rate of 38.9 per 1,000; Magdeburg has a death-rate of 33 per 1,000, with water varying from 27° to 70° of hardness. The deduction of Dr. Letheby's does not seem, therefore, to be universal, and there are so many other conditions that affect the mortality of large cities and towns, that no arguments can be drawn from such statistics in favor of or against a hard water.

On the other hand, Dr. Lersch¹ enumerates a large number of diseases, especially goitre, which are considered to be due to the use of hard water. One of the inorganic constituents which tends to render water hard, viz., sulphate of calcium, or gypsum, has been quite conclusively proved to have an injurious effect upon the health.

M. Bergeret² attributes the production of goitre to the presence of a large amount of sulphates in the system, which condition can be caused by drinking water containing gypsum. In one case cited to prove this, nearly all of the inhabitants of a town which was supplied with drinking-water largely impregnated with this compound were affected with goitre until the water-supply was changed, when the disease ceased to be produced.

In connection with the waters now under consideration, the question of hardness has but slight importance, since they are very decidedly soft waters, all being under 3° of hardness.

It may be said, further, in favor of soft waters for domestic use, that the Vienna commission reported in favor of them, and Dr. Frankland considers water to be the more conducive to health, the fewer salts it contains. The advantage of soft water over hard, for detergent purposes, is unquestioned.

By the following table it will be seen that many of the best drinking-waters now in use in Europe are under 5° of hardness. (From Edw. Smith's work on "Foods.")

¹*Hydrochemie*, Bonn, 1870.

²*Journ. de Pharm. et de Chim.*, Jan., 1874.

Hardness of Various Good Drinking Waters.

LOCALITY.	HARDNESS.	LOCALITY.	HARDNESS.
Bassenthwaite Lake	2.83	Rhine	10.76
Buttermere	1.01	Rivington Pike	3.72
Cocker	2.15	Rydal Lake	3.10
Crawley Burn	6.03	Severn above Newtown .	3.09
Crummock Water	1.30	Skiddaw	3.37
Derwent Water	1.74	Swanston Water	6.22
Derwent	3.37	Windermere	4.04
Ennerdale Lake	1.45	Lake Zug	9.03
Grassmere Lake	2.70	Lake Zurich	10.61
Kent	3.90		

The Effect of thickly settled Districts upon the chemical Composition of Water. — The effect of thickly settled districts upon well-water is well understood. Where a district is drained by cesspools, all of the kitchen refuse containing vegetable and animal matter in a state of decomposition, as well as the contents of privies and water-closets, is thrown into the cesspools, whence the liquid portions highly charged with organic matter find their way into the surrounding earth to the water level, which is the level of the surface wells. After a longer or shorter time, depending upon the character of the soil, the earth becomes saturated, and will no longer exert a purifying influence. If the well is upon level ground, there is a constant current of water in the subsoil toward the well from the surrounding earth on all sides, and the contaminated water from the cesspool will get into the well on whichever side it is situated; if the well is upon a side-hill the current of water in the subsoil is toward the natural drain of the country, or toward the valley, so that only contaminated water from cesspools situated above the well finds its way

into it, unless the surface of the well is at a lower level than the cesspool. In the water of wells which have been contaminated in this way, we find a large increase in the solid constituents, both organic and inorganic, a large increase of free ammonia and chlorine showing sewage contamination, an increase of "albuminoid" ammonia from both vegetable and animal matter, and sometimes sulphuretted hydrogen, which is produced by the decomposition of the albumen, as in the case of the Mt. Desert well referred to above.

The same principle holds good in the case of running waters, on the banks of which are situated large towns. The brook or river must be the natural drain of the country, and toward this the subsoil water steadily flows, carrying with it in solution the various soluble constituents of the earth through which it has come, and sewage matter also, if the earth has been saturated with it from cesspools in the vicinity. In the case of a running stream thus contaminated, the products of the decomposition of organic matter are not retained to the extent that they are in wells, the volatile products, such as ammonia and sulphuretted hydrogen, readily escaping into the atmosphere, and the non-volatile ones flowing down the stream, and being diluted with the large volume of pure water coming from above. It is, therefore, much more difficult to detect the contamination in a running water than in a well; in fact, where the stream is a large one, it is impossible, the extent of dilution is so great. In the cases of the small streams we have been enabled to study this effect quite satisfactorily, since the waters were collected during a dry season, and there were no surface washings to complicate our results. These results may be seen by reference to the analyses made of the water of Angle brook below Marlboro', of Sudbury river above and below Ashland, of Charles river above and below Holliston, and of Mill brook above and below Arlington.

The effect of large towns and cities, which have open drain

or pipe sewers, upon running streams is much greater than that of those which have only cesspool drainage. N. Beardmore, Esq., in evidence given before the "Royal Commission on Water Supply of London," considers the sewage from "all towns with above 3,000 inhabitants, or, in fact, all towns which choose to have pipe drainage," as dangerous, and says, "pipe drainage is an enemy to rivers."

The effect of pipe drainage upon river-water may be seen to a slight extent by the analysis of the Charles-river water above and below Milford, which town has a small sewer running through the principal street and emptying directly into the Charles. The contrast is not so great, however, as if the water above the town did not come from a very large and shallow mill pond (Cedar Swamp pond), the bottom of which was covered with a large amount of decaying vegetable matter, which accounts for the large amount of both free and "albuminoid" ammonia in the water above the town.

Filtration. — The effect of filtration upon a large scale is well shown in the case of the London water. From the report of the Water Commission above referred to (p. ci.), it appears that the filters not only remove the suspended matters, but also a very considerable amount of those which are dissolved, while the amount of oxygen in the water is sometimes increased.

The following table gives the amount of total dissolved material, organic and volatile, ammonia and oxygen in the water before and after filtration, as effected by the Thames, New River and East London companies : —

	GRAINS TO THE IMPERIAL GALLON.					
	THAMES CO.		NEW RIVER CO.		E. LONDON CO.	
	Before filtration.	After filtration.	Before filtration.	After filtration.	Before filtration.	After filtration.
Dissolved Matter	20.825	19.479	22.402	21.550	24.940	24.360
Organic and Volatile . . .	1.261	0.976	0.702	0.567	0.915	0.300
Dissolved Oxygen	0.796	0.825	0.906	0.906	0.891	0.752
Ammonia	0.003	0.002	0.001	0.001	0.004	0.003

The analyses of Wanklyn and Chapman, of the "Thames, near Hampton court, where the water companies take their supply," show a diminution in both the free and "albuminoid" ammonia after filtration, as follows :—

DATE.	PARTS PER 100,000.			
	BEFORE FILTRATION.		AFTER FILTRATION.	
	Free Ammonia.	"Albuminoid" Ammonia.	Free Ammonia.	"Albuminoid" Ammonia.
July, 1867 . . .	{ 0.0045 0.0015	0.028	0.0010	0.006
		0.023		
Sept. 1868 . . .	0.0020	0.022	0.0015	0.007

Thus, a very great reduction in the amount of organic matter is effected by filtering water through sand filter-beds, which are not overtaxed.

In reference to the removal of sewage contamination from water by filtration, we cannot rely upon it, although it would probably remove a large proportion of it. In the evidence before the Water Commission of London, we find the following testimony given by Dr. Frankland :—

"*Question.* Will no system of filtration remove it (sewage) ?

"*Answer.* I would not say that it is impossible to remove it, but no system of filtration will secure its removal. There are only two processes by which it can be effectually removed, the one is by boiling for a long time, and the other is by distillation ; and, therefore, it is that I say, that, inasmuch as those two processes are impracticable on a large scale, in my opinion water that has once been contaminated by sewage ought not afterwards to be used for domestic purposes.

"*Ques.* Then, are we to understand you to say that no amount of filtration would render those waters fitted for the supply of the metropolis ?

"*Ans.* As I have stated, no process of filtration that has hitherto been devised will remove choleraic dejections from water ; and, inasmuch as it is generally believed that the noxious matter of sewage exists there in the forms of minute germs, which are probably smaller than blood globules, I do not believe that filtration through a considerable stratum of chalk could be relied upon to free the water perfectly from such germs."

VI. OPPORTUNITIES FOR STORAGE.

There can be no doubt that both vegetable and animal impurities gradually disappear from water when exposed to the influence of light and air either in large lakes or running rivers, though the rapidity with which this process takes place has often been greatly exaggerated. Mr. S. F. Holmes, surveyor of Sheffield, says in answer to a question whether a certain water is at all colored with peaty matter : "It is, until it has been stored in the reservoirs. From thence the water runs down a conduit for some miles to the services, and it remains in some of them for three days before it is used and the coloring matter to a great extent is taken out.

"*Ques.* How long does it take to precipitate the coloring matter ?

"*Ans.* I should think two or three days would do it, but it is not often that you can observe it in the town." ¹

Although the coloring matter in our river-water does not seem to disappear so readily as that of the water referred to in the above answers, yet there is no doubt of the beneficial effect of storage in this respect. The testimony of eminent chemists and hygienists bearing upon this subject has been given in another portion of this report, and need not therefore be repeated.

In this process of purification the organic substances are generally supposed to be oxidized and precipitated. It is, however, difficult to arrive at correct conclusions as to the effect of storage by an examination of the water of rivers and of the lakes into which they run, for a river may, from some temporary cause, bring very impure water into a lake to be there mixed with a large body of purer water brought to the lake either by the same river at a former time, or by other rivers, or by underground springs. The effects of storage in the purification of water will therefore be masked by the still greater effects of dilution. For this reason we have endeavored to make experiments where the effects of dilution could be excluded and the effects of light and air, as the active agents in purification by storage, could be studied separately. The details of this investigation will be found in Appendix B. Though owing to the small number of experiments no very positive conclusions are warranted, yet the results seem to indicate that oxidation plays a less important part in the purification of water by storage than has been sometimes supposed.

Whatever may be the nature of the process by which purification by storage is effected, there is no doubt that, in any scheme for supplying a large city with river-water for domestic use, storage basins are no less important for ensuring the purity, than as a means of regulating the quantity

¹ Evidence before Royal Commission on Water Supply of London.

of the water to be supplied. It must be borne in mind, however, that purification by storage can only be properly effected when the basins have a depth sufficient to prevent vegetable growth upon the bottom, for, in consequence of the growth, death and decay of vegetable substances, the water of shallow basins is found to deteriorate instead of improving by storage. As instances of this sort of contamination may be mentioned the waters of Cedar Swamp pond and Whitehall pond and the water supplied to Arlington as compared with that of Mill brook. The analyses of these waters are to be found in Tables I., II. and IV., pages 43, 50 and 56.

It will be seen, therefore, that from a sanitary point of view, it is important to consider the size and depth of the proposed storage basins, in order to decide as to the relative merits of the various schemes for supplying the city with water.

PART SECOND.

DESCRIPTION OF RIVERS.

Sources of Information.

The sources from which we have obtained information to enable us to judge of the relative merits of the four rivers in question may be classified as follows: —

I. PERSONAL INSPECTION OF THE RIVERS AT VARIOUS POINTS OF THEIR COURSE.

This inspection was made by the whole committee, accompanied by the City Engineer, Mr. Davis, or by the resident Engineer, Mr. Fteley. Ten days were thus devoted to excursions to the different drainage areas, in the course of which the color, taste and general appearance of the water were

determined at many different points on the rivers and their tributaries. The most important sources of pollution, and their effect upon the character of the river-water, were also noted.

II. REPORTS FROM THE ENGINEER'S OFFICE.

The City Engineer has at our request caused a list to be prepared giving the number and character of the manufacturing establishments situated on the various rivers and their tributaries, and also those situated within the various water-sheds, though not upon the streams, and consequently not using water-power. We have also received from the same source an approximate estimate of the population in the various water-sheds and the ratio of the population to the drainage area. These documents will be found in Appendix A.

For our further guidance in this matter, an opinion has been given by an engineer on the possibility of diverting the sewage of the principal towns in the different drainage areas from their respective rivers, in case these rivers should be chosen as a source of water-supply; but as this opinion does not rest on actual surveys, it is not offered for publication.

III. CHEMICAL ANALYSIS.

Thirty-five samples of water collected either on the excursions above alluded to or subsequently, at points indicated by us, by a competent member of the Water Department, were subjected to analysis in the chemical laboratory of the Harvard Medical School. The results are given in tabular form in a subsequent portion of the report.

IV. COLLECTION OF TESTIMONY, SPECIFIC AND GENERAL.

Besides consulting various reports of committees and testimony of experts all bearing upon the general question: "What constitutes wholesome water for domestic use?" we have, wherever it seemed desirable, endeavored to obtain the

testimony of intelligent persons in the habit of using the water of the various rivers under consideration, and competent to give impartial testimony as to the effect of such use.

SUDBURY RIVER.

Color, Taste, and general Appearance. — The water of this river, owing apparently to the meadow land through which it flows in the upper portion of its course, has usually in the summer and autumn a brownish-yellow color. At the time of our visit, in the early part of September, this color was quite deep, our observations in this respect confirming those of Prof. Nichols as given in his report, "On the Present Condition of certain Rivers of Massachusetts." (City Doc. 138, 1874, p. 102.)

The taste of the water differed at different points of the river, being generally of a more or less earthy character. Below the Cordaville Wool Factory the water had a decidedly oily taste.

Sources of Pollution. — 1. Sewage. The following towns are on or near the streams, and must affect their character more or less: Marlboro' (pop. 1870, 8,474), Westboro' (3,601), Ashland (2,186), Framingham (4,968), Hopkinton (4,419), and Southboro' (2,135). Total population of above towns 25,783; total population, excluding Framingham, whose inhabited territory is mostly outside the area determined by the proposed location of lowest dam, 20,815. Total population of drainage area, estimated, at engineers' office, for fractions of towns lying partly within and partly without the area, 16,722.

Although none of these towns is sewered, yet the discharge of sewage from them into the streams is in some instances practically direct and injurious. Marlboro' is a growing town, has a high situation, and consequently rapid slopes. Angle-brook, below the town, shows distinct pollu-

tion, by chemical analysis (see Analyses Table I., No. 20). Westboro' has in prospect a water-supply, but has no sewers. These, however, must follow as a matter of course, and the result will be directly injurious if the sewage be not diverted. Ashland is for the most part low and springy. Its soil is to a great extent sandy and gravelly. Its natural drainage is excellent, and therefore injurious to the Sudbury, which here receives at first hand the discharges of numerous privies, pigsties and kitchen sinks from houses situated on the banks. Hopkinton is very high, its land springy, the highest portions seeming to have as much surface moisture as the low lands. This is a condition which drainage would relieve at the expense of the tributaries, and which even now is favorable to a rapid transfer of sewage to the streams. The influence of South Framingham upon Farm pond is very little at the present day, but will probably increase from year to year, and is therefore worthy of attention.

2. Manufacturing refuse. There are about twenty-five manufacturing establishments on the Sudbury and tributaries. Subdividing these somewhat according to the nature of the works, we have,—

Woollen and shoddy mills	.	.	.	.	.	3
Batting and twine	.	.	.	.	.	2
Print-works (not yet started)	.	.	.	.	.	1
Boot and shoe	.	.	.	.	.	1
Saw-mills	.	.	.	.	.	7
Emery mills	.	.	.	.	.	2
Machine shop	.	.	.	.	.	1
Plaster mills	.	.	.	.	.	4
Grist mills	.	.	.	.	.	9

Total, 30 industries and 220 employés, of which the woollen, shoddy and batting mills employ 128, and the boot and shoe, 30.

There are about fifty-two establishments not using water-power and situated more or less distant from the water-courses. Of these, the gasworks at Marlboro' are not yet started. Six are straw factories at Westboro' and thirty-six are boot and shoe factories. At South Framingham a hat factory discharges its drain upon the margin of Farm pond. The water in this sewer at the date of our visit, Sept. 3, was opaque, filthy, and stagnant. On the same day the Sudbury at Cordaville, below the wool factory, was in a very dirty state, — turbid, with masses of filth floating upon the surface, — and had an oily and otherwise disagreeable taste. The weeds along the margin were discolored. The mill was in operation.

In order to purify the Sudbury for drinking purposes, not only should the several specific nuisances be wholly abated, but whole towns must, sooner or later, come under radical treatment. The same is of course true of the other streams in question. As to the possibility of diversion, this is still to be decided for the several towns by more accurate inspections and surveys than have yet been made. It has been suggested, from an examination of the general features of the country, that Marlboro' sewage may be diverted through Hop, Wash and Landham brooks to the Sudbury at Wayland, a point below where it has been proposed to take this water; that Westboro' may be sewered into the Assabet by the way of Little Chauncy pond and Stirrup brook; that it is practicable to divert the sewage of Ashland to the Sudbury at a point below the city dams. The natural drainage of the central part of Framingham is into the Sudbury below the proposed dams, and the natural drainage of South Framingham is into Beaver Dam brook, a tributary of Lake Cochituate. It is considered possible to divert the South Framingham sewage into Sudbury river below the proposed dams. An exceedingly small part of South Framingham now drains into Farm pond, but this may be diverted in either of two ways.

Density of Population. — Statements in regard to the den-

sity of the population in the Sudbury-river valley, and its probable future increase, being only of interest as affording a means of comparing this river with the other three, will be given in the third part of this report, which is devoted to a comparison of the four drainage areas under consideration.

Chemical Composition. — The worst portions of this river, as shown by the following series of analyses (Table I), are Whitehall pond, below a wool factory in Cordaville, above and below Ashland, and Angle brook just below Marlboro'.

TABLE I.—Sudbury River—[Parts per 100,000.]

Number.	Date.	LOCALITY.	Free Ammonia.	"Albuminoid" Ammonia.	Inorganic.	Organic and Volatile.	Total Residue.	Chlorine.*
18	Sept. 24	Whitehall pond	0.0106	0.0248	2.0	2.6	4.6	0.30
19	" 24	Cold Spring brook (Basin No. IV.) . .	0.0052	0.0150	3.8	1.8	5.6	0.50
20	" 25	Angle brook below Marlboro'	0.0016	0.0104	7.6	5.4	13.0	2.70
21	" 25	Angle brook at Dam No. VII.	0.0010	0.0090	4.6	2.4	7.0	0.70
22	" 25	Stony brook at Dam No. III.	0.0010	0.0190	3.8	3.0	6.8	0.50
23	" 24	Sudbury river at Cordaville ¹	0.0090	0.0270	3.6	3.8	7.4	0.45
24	" 5	Sudbury river above Ashland	0.0020	0.0310	4.2	1.8	6.0	0.80
25	" 5	Sudbury river below Ashland	0.0034	0.0360	4.8	3.4	8.2	1.20
26	Oct. 2	Sudbury river ²	0.0016	0.0290	3.6	3.8	7.4	0.80

¹ Sample taken just below the wool factory.

² Exact locality unknown. Collected by Mr. Fteley for experiments on storage.

Whitehall pond is a shallow pond, which contains a large amount of vegetable matter partially in a state of decomposition, so that a large amount of both the free and "albuminoid" ammonia was detected in its water.

The water from below the wool factory at Cordaville was collected at our request, for the purpose of observing the effect of the factory upon the water. At the time of our visit

the river at this point was extremely filthy, but the specimen collected for analysis had a much better appearance. It does, however, contain too large an amount of free and "albuminoid" ammonia.

The specimens taken above and below Ashland were from points in the river but a short distance apart, yet the alteration in the chemical composition is quite decided. This is easily explained, by the fact that between these two points are numerous pig-pens, sink-drains and privies situated directly on the edge of the water.

In the water of Angle brook, just below the town of Marlboro', we find a large amount of solids, both organic and volatile, and inorganic, and a comparatively large amount of chlorine. This can only be explained by the fact that it must receive, above the point from which the sample was collected, the drainage from Marlboro', since about a mile and a half lower down, at the point of the proposed location of dam No. VII., the amount of these substances is much diminished, owing to the dilution which has taken place, and to the fact that there are no sources of pollution between the two points.

With these exceptions, which can be accounted for by the circumstances in each case, the water has an excellent composition.

The water of Stony brook, at the point of the proposed location of dam No. III., has a hardness of 1° of the English scale.

Opportunities for Storage. — The proposed storage basins on the Sudbury river are seven in number, besides Whitehall and Farm ponds. Some of these basins are situated on the Sudbury river itself, and others on its principal tributary, Stony brook. Owing to the way in which basins II. and III. are to be connected with the gate-chamber of dam No. I., it will be possible to draw the water from either branch of the

stream at pleasure.¹ This is to be regarded as a decided advantage, for in case the water of one branch or basin shall, from any local cause, become impure, it will be possible to give this water the benefit of prolonged storage, while the other branch is used as a source of supply.

In concluding this description of the Sudbury river, it may be well to allude to certain rumors affecting the character of this stream as a source of water-supply. The City Engineer, in his report on an additional water-supply (City Doc. No. 38, 1874, p. 25), quotes the statement of Mr. Loammi Baldwin, made in 1834, to the effect that the water of the Concord and Sudbury rivers possesses some poisonous quality in consequence of which "the workmen obliged to labor in the water complained that it made their hands and feet sore, and if a little scratch occurred to their flesh, or the skin was torn or bruised away, the water would cause it to fester into a serious wound, and it was often necessary to suspend working in it, that the sore might heal."

On the other hand, Mr. Caleb Eddy, Agent for the Middlesex Canal Corporation, writing in 1843, says: "An idle story has been circulated in regard to the water of Concord river containing some deleterious substance which would cause a wound by contact with it, to 'fester' or become greatly irritated. . . . Carpenters, and other mechanics, who have been constantly employed on the works of the canal, and who have been a great many times in the water during the past thirty years, have experienced no such trouble, having daily washed in and otherwise used it."

The portion of the river referred to in these reports is below the point from which water is to be taken in the proposed scheme, and is doubtless liable to receive, at certain seasons of the year, a considerable amount of decaying vegetable matter from the extensive meadows between Wayland and Billerica, though it is highly improbable that water thus

¹ See City Doc. No. 29, 1873, p. 36.

contaminated could produce the injurious effects above alluded to. Against the character of the water in that portion of the river which constitutes the proposed source of supply similar charges have, as far as we are aware, never been made, and our inquiries on this subject have failed to elicit any evidence that the water of this part of the stream can produce any injurious effects upon persons using it.

It has been asserted, however, that the high rate of mortality in the City of Boston during the year 1872 proves the unwholesomeness of the Sudbury-river water, which during a few months of that year was diverted into Lake Cochituate to supply the want created by a prolonged drought.

An examination of the following table, giving the deaths in Boston from various diseases, for the years 1871 and 1872, proves this statement to be without foundation : —

Deaths from Various Diseases in 1871 and 1872.

		DISEASE.	1871.	1872.	Percentage Increase.
<i>Diseases Affected by Water.</i>		Cholera Morbus	31	35	12.9
		Diarrhœa	139	173	24.5
		Dysentery	56	56	0
		Typhoid Fever	172	229	30.1
		Total	402	493	22.6
<i>Diseases not Affected by Water.</i>		Small-Pox	23	738	3109.
		Diseases of Brain	236	368	56.
		Cholera Infantum	526	742	41.
		Scarlet Fever	111	258	132.
		Pneumonia	345	517	50.
		Total deaths in city	5,888	8,090	37.4

It will be seen that, though the total number of deaths in the city was 37.4 per cent. greater in 1872 than in 1871, yet the percentage increase of those diseases which *may* be pro-

duced by impure drinking-water, was less than that of diseases supposed not to be so produced. In other words, though the death-rate in the city was remarkably high in 1872, this great mortality cannot justly be attributed to any unusual impurity of the drinking-water.

CHARLES RIVER.

In considering the relative desirability of this river as a source of water-supply, we have assumed, as a basis of comparison, that the river is to be dammed one mile above South Natick, and the water taken directly from the basin thus formed. Against the construction of the other proposed basin in the neighborhood of Dedham are to be urged, not only the grave objections mentioned by Mr. Fteley in his report (City Doc. No. 85, p. 124), but also the fact that the proposed system of sewers for the growing town of Natick, to be constructed for the purpose of preserving Lake Cochituate from pollution,¹ will empty into the Charles, in the neighborhood of South Natick, and thus render it undesirable to take the water from any point lower down the river.

Color, Taste and general Appearance. — The water of this river was at the time of our visit rather less colored than that of the Sudbury. The taste was generally somewhat earthy. Below Holliston a slightly bitter taste was noticed, and the appearance of the river bottom in this town indicated the presence of decomposing organic matter.

Sources of Pollution. — 1. Sewage. The following towns are wholly or partly within the area: Bellingham (pop., 1870, 1,283), Dover (645), Franklin (2,512), Holliston (3,073), Medway (3,721), Medfield (1,142), Milford (9,890), Norfolk (1,081), Hopkinton (4,421), Sherborn (1,062), Wrentham (2,292). Total population of above towns, 31,122. Total population of drainage area (estimated for fractional

¹ See order passed in Common Council, Oct. 22, 1874, and Mr. Fteley's report on the Sewerage of Natick (City Doc. No. 85, 1874, p. 57).

parts of towns not wholly within the area), 25,149. The towns below the proposed location of the dam at South Natick are not included in the above statement.

Bellingham has a gravelly soil. A cemetery here drains into a small tributary of the Charles. Holliston, a growing town, drains into the outlet of Winthrop pond. At Holliston Centre the stream is sluggish and filthy, has numerous privies in its immediate vicinity, and receives in a very direct manner, by ditches cut upon the steep slopes, the whole drainage of this part of the town. The diversion of the drainage of Holliston offers serious practical difficulties. Medway village is directly on the bank of the river. West Medway is scattered; has surface drainage; no sewers. Chicken brook runs through the edge only of the populated district. A cemetery lies near the banks of the stream. Milford is the most important town on the Charles. Its population to-day is about 11,000. It already has a sewer, on Central street, leading down to the river. All drainage at Milford goes into the Charles. There are numerous privies along the stream. The plan is suggested of diverting the sewage into the Blackstone river. Cedar Swamp pond, just above Milford, was, at the time of our visit, an extensive flat of soft, boggy mud, through which meandered a comparatively narrow stream. This would seem to be a fruitful source of the products of vegetable decomposition. It is considered quite practicable to divert the sewage of Medfield *via* Mill brook into the Neponset river. South Natick drains into the Charles, but below the site of the proposed dam. The question of diversion of sewage in some of these cases is not easily answered.

2. Manufacturing refuse. Total number of factories using water power on the Charles river and tributaries, 66. Total number of employés, 884.

Classification of 66 mills on the Charles river and its tributaries : —

Woollen and shoddy mills	10
Paper mills	4
Cotton, thread and batting	6
Felting mills	2
Saw mills	26
Grist mills	9
Machine, nail, knife, etc. . . .	7
Carriage, wheelwright and cabinet . .	4
Paint, bonnet-frame, leather board, cement,	
brick, each 1	5

A difference will be found in the sums total, owing to a certain amount of subdivision.

Total number of employés in the woollen, shoddy, felting, paper, batting, cotton and thread mills using water-power, about 700.

Total number of factories on the Charles-river drainage area, 139.

Chemical Composition. — It will be seen, by an examination of the following analyses of Charles river [Table II.], that the worst portions at the time of our visit were Mine brook, and those portions above and below the towns of Milford and Holliston.

TABLE II.—Charles River—[Parts per 100,000].

Number.	Date.	LOCALITY.	Free Ammonia.	"Albuminoid" Ammonia.	Inorganic.	Organic and Volatile.	Total Residue.	Chlorine.
1	Sept. 7	Winthrop pond above Holliston . .	0.0080	0.0230	2.6	3.0	5.6	1.00
2	" 7	Jar brook below Holliston	0.0100	0.0420	2.6	3.0	5.6	1.75
3	" 7	Cedar Swamp pond above Milford . .	0.0180	0.0240	2.6	2.2	4.8	0.80
4	" 7	Charles river below Milford ¹	0.0026	0.0220	7.4	5.0	12.4	3.00
5	" 7	Mine brook near source	0.0054	0.0320	3.0	3.8	6.8	0.60
6	" 9	Mine brook near mouth	0.0026	0.0350	4.0	2.8	6.8	0.50
7	" 9	Chicken brook ²	0.0000	0.0200	4.2	3.2	7.4	1.00
8	" 9	Mill river near mouth ³	0.0026	0.0160	2.4	2.2	4.6	0.50
9	" 9	Charles river at Rockville	0.0026	0.0230	2.8	2.8	5.6	0.40
10	" 9	Stop river near mouth ⁴	0.0026	0.0160	5.0	2.0	7.0	0.50
11	" 12	Charles river at Dearth's Bridge ⁵ . .	0.0026	0.0270	2.6	3.0	5.6	0.40
12	" 12	Boggistow brook ⁶	0.0040	0.0160	3.6	3.0	6.6	0.60
13	" 12	Charles river above South Natick . .	0.0026	0.0280	2.6	3.0	5.6	0.80
14	" 12	Charles river below South Natick . .	0.0026	0.0220	3.0	2.4	5.4	1.00
15	" 14	Charles river above Dedham	0.0010	0.0168	2.0	3.2	5.2	0.40
16	" 14	Mother brook below Dedham	0.0016	0.0176	3.8	2.2	6.0	0.55
17	" 14	Charles river at Newton Upper Falls	0.0026	0.0185	3.0	3.4	6.4	0.70

¹ Collected at Howard's bridge.

² At mouth of brook just below W. Medway.

³ In Norfolk.

⁴ In a portion of the proposed Basin.

⁵ Below Medfield.

⁶ About two miles from mouth in Medway.

The dirty condition of Mine brook near its source was probably due to the fact, that the specimen was collected at a time when a mill pond just above the point of collection was being scoured. At this point is a felt mill, and still farther down the brook is a shoddy mill, two of the most objectional kinds of manufactories.

The water above Milford, in Cedar Swamp pond, was at the

time of our visit very low, and the bottom of the pond was covered with a large amount of vegetable material, which was partially in a state of decomposition. This accounts for the large amount of free and "albuminoid" ammonia obtained upon analysis. Below Milford the specimen was collected at some distance below the opening of the sewer, so that there was a good opportunity for the sewage to be diluted, and for the free ammonia to escape by volatilization; yet the amount of "organic and volatile" and chlorine was much greater than in any other portion of the river examined.

The water from above Holliston was collected from Winthrop pond, which is a shallow pond and contains much vegetable matter. The bottom was not, however, exposed to the same extent, and decomposition was not as evident as in the case of Cedar Swamp pond. In the water below Holliston we find an increase of the free and "albuminoid" ammonia and chlorine, showing the probable addition of sewage matter during its passage through the town, where to external appearances it was extremely filthy.

The hardness of the Charles-river water at Rockville, at the head of the proposed basin, is 1° , the same as that of Sudbury river.

Opportunities for Storage. — The storage of water in the Charles-river scheme for water-supply is to be effected in one large basin. This is to a certain degree disadvantageous, for a local source of pollution will in this case necessarily affect the whole supply of water, whereas in a scheme providing for numerous smaller storage basins it will often be possible to store the impure water until it shall have time to purify itself. On the other hand, a single large storage basin is, other things being equal, less likely to have shallow flowage than a series of small ones, since the length of water line in proportion to the water area will be greater in the latter than in the former.

MYSTIC RIVER.

Color, Taste, and general Appearance. — At the time of our visit to the Mystic river the water was, as far as the brownish-yellow color was concerned not very different from that of the Charles. Several tributaries of this river, however, owing to sources of pollution described below, had a color, odor, and taste that were in the highest degree objectionable.

Sources of Pollution. — 1. Sewage. The principal towns are Stoneham (pop., 1870, 4,513), Winchester (2,645), and Woburn (8,560). Total population of towns, 15,718. Total population of drainage area, 16,935.

The area is small and the towns compact and undrained. A cemetery was noticed lying close upon the little stream which crosses High street, in Stoneham, and empties into the Abajonna. Winchester pond is shallow and full of tufts of aquatic plants, suggesting a probably large amount of vegetable decomposition. The water of Wedge pond was greenish and turbid when visited. Woburn is rocky, undulating, and everywhere springy. It is supplied with water filtered from Horn pond or its immediate vicinity.

2. Manufacturing refuse. Factories on the tributaries of Mystic pond, 55, viz. : —

Tanneries and currying shops	.	.	.	26
Glue stock factory	.	.	.	1
Glue factories	.	.	.	2
Wool scouring establishment	.	.	.	1
Gas-works	.	.	.	1
Shoe factories	.	.	.	14
Inner sole and stiffening works	.	.	.	2
Saw-mills	.	.	.	4
Sash-factory	.	.	.	1
Grist, saw-factory, watch-hand, ropewalk, each	1,	4		

Total industries, 56; employés, 2,975.

The 26 tanneries and currying-shops finish 11,325 hides per week; and the number of employés is 1,737.

Factories within the Mystic water-shed, not on the streams, 27; employés, 497.

Total number of factories in the Mystic drainage area, 82. Total employés, 3,472.

There are twelve tanneries on Russell's brook, which is thereby converted into a sewer of the most offensive description, notwithstanding the amount and flow of the water. Cummings' brook, before it joins Kendall's brook, is a still larger stream, and quite as rapid. It was exceedingly offensive to sight and smell when visited, and the air around had a strong odor of putrid animal matter, recalling the previous visit to the beaming-room. The mill-pond above Cummings' factory was fouled and blackened by the refuse of a morocco factory, and the bottom and sides of this pond, as well as of the stream below, were everywhere coated with an offensive black mud. A small stream, half a mile long, near Cummings' brook, and like it, an affluent of Horn pond, received the waste of two tanneries, and was also black and highly offensive.

Thus, from the dense population the sewage, and from the tanneries a large amount of decomposing animal matter, are turned into the Abajonna, and the Horn-pond branch, to be conveyed, not all, but inevitably some of it, to Mystic pond. And, judging by the past, the amount of pollution will increase from year to year, and with it the difficulty of the problem of purification. To leave matters as they are is to confidently expect in time a degree of contamination which will make itself felt in East Boston, Charlestown, Chelsea and Somerville, if it be not already felt in those communities. It may be that their statistics of mortality of to-day compare favorably with those of the well-water period, but it is questionable if the figures of the future will compare favorably with those of to-day. Of course, the only remedy

is to keep all this filth out by perfect sewerage. (See report of Mystic Water Board on this subject, City Doc. No. 94.)

Chemical Composition. — There are so many sources of pollution upon the banks of this proposed source of water-supply, both of the nature of objectionable kinds of manufactories, and of a thickly settled population, that the chemical analysis of the majority of the specimens [Table III.] showed a very dirty condition.

TABLE III. — Mystic River — [Parts per 100,000].

Number.	Date.	LOCALITY.	Free Ammonia.	"Albuminoid" Ammonia.	Inorganic.	Organic and Volatile.	Total Residue.	Chlorine.
27	Sept. 17	Abajonna River, above Burbank's pond	0.0080	0.016	8.0	4.0	12.0	1.8
28	" 17	Cummings' Brook, ¹ Unfiltered . .	0.1330	0.050	10.4	18.0	28.4	10.4
		" " Filtered . .	0.1330	0.028	9.0	16.4	25.4	10.4
29	" 17	Russell's Brook, ² Unfiltered	...	...	586.2	76.6	662.8	346.0
		" " Filtered	2.6660	0.240	595.0	53.8	648.8	346.0
30	" 27	Abajonna River, above Mystic Lake	0.0080	0.023	8.0	7.2	15.2	4.1
31	" 17	Mystic Lake at Gate House . . .	0.0084	0.023	5.0	9.4	14.4	2.6
35	Oct. 28	Abajonna River, above Chemical Works in North Woburn . . .	0.0010	0.011	3.0	2.4	5.4	0.8

¹ Below Cummings' tannery.

² On Main St., near the ice-house track, below all the tanneries.

The sample (No. 35) collected at the head of the Abajonna, above all sources of pollution, has a composition as good as that of any of the other streams; but a short distance lower down, at a point just above Burbank's pond, the amount of impurities is nearly doubled.

During the analysis of the Cummings'-brook specimen, which was collected a short distance below Cummings' tan-

nery, at a time when there was a large amount of water running, the atmosphere of the laboratory was pervaded with an odor reminding one strongly of a piggery. In both this specimen and that collected from Russell's brook, below all the tanneries, there was a very large amount of sediment, and a strong odor of sulphuretted hydrogen, the amount of which, however, was not determined. The amount of suspended matter in the water of Cummings' brook was three, and in that of Russell's brook fourteen parts in 100,000.

The analysis of the water taken from the surface of Mystic pond at the gate-house shows that the impurities, which have been added between Burbank's pond and the lake, have, by no means, entirely disappeared from the water during its passage down the stream and through the lake.

The hardness of the water, at the gate-house, is two and one-half degrees, while that of the water at the very source of the Abajonna, above Eaton's Chemical Works, in North Woburn (No. 35, Table III.), is only one degree, the same as that of the other rivers. This difference must be caused by inorganic impurities added to the river between this point and the lake.

Mill brook flows through Arlington and empties into the Lower Mystic. Its composition is, therefore, only of importance in reference to the proposed use of this basin as an additional storage reservoir.

The water of this brook above the Arlington reservoir has a good composition [Table IV.], although the amount of organic and volatile is quite large. In passing through the reservoir, which is quite shallow, instead of being rendered purer, it receives a considerable amount of vegetable material, as shown by the decided increase of "albuminoid" ammonia in the water drawn from a faucet in Arlington. The water in the reservoir, at the time of our visit, as well as that drawn from the faucet, was very turbid.

TABLE IV. — Mill Brook — [Parts in 100,000].

Number.	Date.	LOCALITY.	Free Ammonia.	"Albuminoid" Ammonia.	Inorganic.	Organic and Volatile.	Total Residue.	Chlorine.
32	Sept. 25	Above the Arlington Reservoir . . .	0.0026	0.0066	5.0	5.4	10.4	1.10
33	" 25	From faucet in Arlington	0.0016	0.0240	4.4	4.4	8.8	0.90
34	" 25	Below Arlington Gas House	0.0530	0.0200	4.2	4.8	9.0	1.20

The water of the brook, during its passage through the town, receives an addition of free ammonia and chlorine from the town drainage, which would render its direct admission into a storage reservoir undesirable.

The hardness of the water above the reservoir is two degrees, being one degree harder than the water of the other rivers.

Opportunities for Storage. — In the scheme for supplying the city with the water of the Mystic river storage is to be effected in six artificial and two natural basins. This gives a very extended water line in proportion to the water area, resulting, as will be seen, in a large amount of shallow flowage.

SHAWSHINE RIVER.

Color, Taste, and general Appearance. — The water of the Shawshine was, at the time of our visit, rather less colored than that of any of the other rivers, and the taste seemed to us correspondingly pure.

Sources of Pollution. — 1. Sewage. The principal towns are Bedford (pop., 1870; 849), Billerica (1,833), Burlington (626), and Lexington (2,277). Total population of above towns, 5,585. Total population, omitting Billerica, whose populated district is mostly on the Concord river, 3,752. Total population of Shawshine drainage area, 2,691. Lex-

ington is the town of chief importance in the present connection. It has no drainage. The town can be drained, it is said, into Charles river by way of Clematis brook. The population of the other towns is scattered, and so situated as not greatly to affect the character of the water.

2. Manufacturing refuse. Factories upon the streams, 4; Employés, 22. A block-printing establishment at Burlington has 16 employés. The other establishments are saw, grist, planing and cider mills.

Chemical Composition. — The chemical composition of the water of the Shawshine river, as may be seen by the following table [Table V.], is unobjectionable, but it is no better than that of the head waters of the Sudbury, and but little better than that of those head waters of the Charles on which there are no sources of pollution.

TABLE V.—Shawshine River—[Parts per 100,000].

Number.	Date.	LOCALITY.	Free Ammonia.	"Albuminoid" Ammonia.	Inorganic.	Organic and Volatile.	Total Residue.	Chlorine.
35	Sept. 22	At the old Middlesex Canal ¹	0.002	0.012	4.4	2.4	6.8	0.50
36	" 22	West branch ²	0.004	0.016	5.0	2.6	7.6	0.50
37	" 22	Vine brook ³	0.000	0.012	5.0	2.2	7.2	0.60

¹ At the proposed location of the dam of basin No. I.

² At the western apex of proposed basin No. II.

³ At the eastern apex of proposed basin No. II.

The hardness of the water of the Shawshine at the old Middlesex canal is 1°, the same as that of the Charles and Sudbury.

Opportunities for Storage. — The proposed storage basins on the Shawshine river are three in number, holding in the aggregate 3,300,000,000 gallons. How these storage facilities compare with those of the other rivers will be considered in the third part of this report.

PART THIRD.

COMPARISON OF RIVERS.

COLOR, TASTE AND GENERAL APPEARANCE.

A superficial examination of the color, taste and general appearance of the water, such as we were able to make at the time of our visit to the different streams, showed that in these respects the rivers in question differed very decidedly from each other. The brownish-yellow color, which all the rivers possessed in a greater or less degree, was most marked in the Sudbury and least perceptible in the Shawshine river. The Mystic and the Charles did not differ greatly from each other in this respect, the slight difference between them being in favor of the Mystic. In regard, therefore, to the brownish-yellow color, taken as an evidence of the presence of organic matter of vegetable origin, the rivers were, at the time of our visits, to be preferred in the following order: —

SHAWSHINE,
MYSTIC,
CHARLES,
SUDBURY.

As this order is exactly the inverse of that in which the rivers were visited, and as our excursions extended over a period of twenty-four days, during which little or no rain fell, it seemed probable that the observed difference of color might depend to some extent upon the time of the observation, or, in other words, that all the rivers might have been growing gradually less and less colored during the time occupied by our excursions, and that, had they been visited in the opposite order, their relative depth of color might also have been inverted. To decide this question a sample of water was collected at our request on the same day, Nov. 17th, 1874,

from each of the four different rivers. The points chosen for the collection of these samples were, on the Sudbury river just above the present dam, on the Charles at South Natick, on the Abajonna at Cross street, Winchester, and on the Shawshine at the crossing of the Telegraph road.

The samples thus collected were all of them less colored than the water of corresponding points, as observed at the time of our visits, which is readily accounted for by the prolonged drought which had prevailed. The difference between the four samples in respect to color was very slight, but by careful comparison their order was determined as follows : —

MYSTIC,
SHAWSHINE,
CHARLES,
SUDBURY,

the Sudbury being the most highly colored. This order differs from that obtained by the comparison of the former observations only in the relative position of the Mystic and Shawshine rivers. It seems, therefore, very probable that the waters of the Charles and Sudbury are as a rule more highly colored than those of the other two rivers, and that of the Charles and Sudbury the latter is the more deeply colored of the two.

This *brownish-yellow* color is, however, not the only point to be regarded in considering the general appearance of river-water.

Several tributaries of the Mystic river are, as above stated, polluted to such a degree by the refuse from tanneries and other manufacturing establishments, that they are extremely offensive to sight and smell. Taking this fact into consideration the Mystic is decidedly the least desirable stream, and the four rivers are, in regard to color, taste and general appearance, to be preferred in the following order : —

SHAWSHINE,
CHARLES,
SUDBURY,
MYSTIC.

SOURCES OF POLLUTION.

Sewage. — None of the four streams in question receives a large amount of direct sewage contamination, yet all furnish special instances of a more or less objectionable character. Among the most obvious of these are the sewer at Milford and the ditches at Holliston. Equally obvious and direct and not less objectionable in the aggregate are the numerous privies which overhang the streams in various localities. But the more direct the pollution the more definite the remedy; and as nearly all the towns are undrained, and as a diversion of direct sewage is a *sine qua non* in the case of any river selected as a source of water-supply, the comparative amounts of probable pollution of the several rivers may be fairly inferred from the relative density of population of the respective drainage areas, a subject which is treated elsewhere in this report.

Manufacturing Refuse. — In comparing the four streams on the basis of relative pollution by manufacturing refuse, we have consulted the State reports of statistics of industries for 1845, 1855 and 1865 (the latest), and have availed ourselves of information as to the number and kind of manufacturing establishments in the several drainage areas in 1874, kindly furnished, at our request, from the Engineer's office. The latter information, obtained by personal inspection, is, from the mode of its collection, less exhaustive than State reports, and cannot, therefore, be directly compared with them in the same tables, while, as coming from an independent source and bearing a later date, it has a value of its own. The State reports, on the other hand, are defective,

especially in the returns of number of works and employés, and for comparison on a small scale, as between towns and towns, would be likely to mislead in these particulars; while the sums total for whole collections of towns by drainage areas seem more worthy of comparison as holding a balance of errors. The State returns are more complete and uniform in the matter of values of manufactured products than in any other item, and for this reason a separate comparison has been made on this basis.

The value of such returns in the question before us, aside from their numerical correctness, is in proportion to the uniformity of their relation to the quantity and quality of refuse material, and of the relation of these to the several waters under consideration. If a single cotton factory on the Charles turns its refuse directly into the stream, while another on the Sudbury utilizes its waste material by irrigation, or if the one is situated directly on the stream and is run by water-power, while the other, run by steam, is situated at some distance from the water-courses, then, it is obvious, a comparison of the values of the manufactured products of the two establishments will not indicate their relative polluting effect upon the respective waters. But the need of water, not only for power, but for the various processes of manufacture in a large proportion of works having liquid refuse, approximates these to the water-courses, and the comparison which might mislead in detail would, when applied to whole river-basins, fairly indicate the order of preference.

We are of the opinion that the returns as to number of works are sufficiently accurate to determine the order of preference, but not precise rates of growth, while as to valuation of products there is sufficient uniformity to determine both relative amounts and percentage rates of increase as nearly as the subject demands.

Synopsis of information concerning manufactures, by drainage areas.

1. Collected from State reports : —

(a.) Number of establishments.

(aa.) Including Framingham and Billerica.

In 1845, 1855, and 1865.

(bb.) Omitting Framingham and Billerica.

In 1845, 1855, and 1865.

(b.) Value of manufactured products.

(aa.) Including Framingham and Billerica.

In 1845, 1855, and 1865.

(bb.) Omitting Framingham and Billerica.

In 1845, 1855, and 1865.

2. Collected by personal inspection : —

(a.) Number of establishments.

In 1874.

In the tables which follow, the above data are given in figures representing the absolute amounts, and also the ratio per square mile, in each drainage area. Manufactured products are also reduced to four classes, and the absolute values of each and the ratio per square mile given for each drainage area. The first three of these classes are also collected into one large class, and the amounts and ratio given as in the other cases. The ratios per square mile in these tables have been reduced to nine diagrams on a system of rectangular lines, in order to present to the eye an easy and ready interpretation of the figures. Whoever, in looking at the diagrams, seeks for the ready indication of relative rates of growth in the ascending lines, should bear in mind that this is not here directly presented to the eye. Of two parallel ascending lines, for instance, the upper indicates the less percentage rate of increase.

Number of manufacturing establishments and ratio per square mile in the collective towns, including Framingham and Billerica, of the several drainage areas : —

In 1845 (State Report).

	Works.	Sq. Miles.	Ratio.
Sudbury	73	73	1.00
Mystic	40	28	1.43
Shawshine	23	34	0.68
Charles	122	152	0.80

In 1855 (State Report).

	Works.	Sq. Miles.	Ratio.
Sudbury	75	73	1.03
Mystic	116	28	4.14
Shawshine	22	34	0.65
Charles	146	152	0.96

In 1865 (State Report).

	Works.	Sq. Miles.	Ratio.
Sudbury	149	73	2.04
Mystic	102	28	3.64
Shawshine	45	34	1.32
Charles	230	152	1.51

Tabulating the results we have : —

	1845.	1855.	1865.
Shawshine	0.68	0.65	1.32
Charles	0.80	0.96	1.51
Sudbury	1.00	1.03	2.04
Mystic	1.43	4.14	3.64

(See Diagram I.)

Number of manufacturing establishments and ratio per square mile in the collective towns of the several drainage areas, omitting Framingham and Billerica, to compare with the table in which these two towns are included : —

In 1845 (State Report).

	Works.	Sq. Miles.	Ratio.
Sudbury	35	73	0.48
Mystic	40	28	1.43
Shawshine	8	34	0.24
Charles	122	152	0.80

In 1855 (State Report).

	Works.	Sq. Miles.	Ratio.
Sudbury	57	73	0.78
Mystic	116	28	4.14
Shawshine	15	34	0.44
Charles	146	152	0.96

In 1865 (State Report).

	Works.	Sq. Miles.	Ratio.
Sudbury	118	73	1.62
Mystic	102	28	3.64
Shawshine	28	34	0.82
Charles	230	162	.51

In 1874 (Mr. Cunningham's Report).

	Works.	Sq. Miles.	Ratio.
Sudbury	77	73	1.05
Mystic	82	28	2.93
Shawshine	4	34	0.12
Charles	139	162	0.91

Tabulating the results we have : —

	1845.	1855.	1865.	1874.
Shawshine	0.24	0.44	0.82	0.12
Charles	0.80	0.96	1.51	0.91
Sudbury	0.48	0.78	1.62	1.05
Mystic	1.43	4.14	3.64	2.93

(See Diagram II.)

Value of total products of manufactures of towns wholly or partly within the respective drainage areas, collected from the State reports of industries for 1845, 1855 and 1865 : —

	1845.	1855.	1865.
Sudbury	\$1,310,015	\$4,400,072	\$7,399,501
Mystic	818,533	2,967,107	4,526,588
Shawshine	289,059	459,143	1,323,681
Charles	2,171,636	5,496,218	8,904,963

Value per Square Mile of Drainage Area.

Sudbury	17,945	60,275	101,363
Mystic	29,233	105,969	161,664
Shawshine	8,502	13,504	33,932
Charles	14,237	36,159	58,585

(See Diagram III.)

The above summary includes for the Sudbury, the towns of Ashland, Framingham, Hopkinton, Marlborough, Westborough and Southborough; for the Mystic, the towns of Stoneham, Winchester and Woburn; for the Shawshine, the towns of Billerica, Bedford, Burlington and Lexington; and for the Charles, the towns of Bellingham, Dover, Franklin, Holliston, Medway, Medfield, Milford, Sherborn, Hopkinton, and Wrentham.

Omitting from the Sudbury, Framingham, whose drainage is mostly below the proposed dams, and from the Shawshine, Billerica, whose factories are mostly on the Concord river, we have : —

	1845.	1855.	1865.
Sudbury	\$611,281	\$3,539,594	\$5,041,919
Mystic	818,533	2,967,107	4,526,568
Shawshine	105,965	131,416	120,531
Charles	2,171,636	5,496,218	8,904,968

Value per Square Mile of Drainage Area.

Sudbury	8,374	48,483	77,287
Mystic	29,233	105,969	161,664
Shawshine	3,117	3,865	3,810
Charles	14,287	36,150	58,585

(See Diagram IV.)

In order to estimate the comparative amounts of different kinds of manufacturing refuse in terms of the value of manufactures, the four following classes are arbitrarily assumed : —

1. Glue, tanning, currying, shoddy, woollen, felting, silk and paper works.
2. Cotton, batting, thread and twine factories.
3. Chemical, dye, print, bleach, paint, gas and soap works and breweries.
4. Straw bonnet and hat, boot and shoe, and all other works not elsewhere mentioned.

Framingham and Billerica are omitted in the following tables : —

		1845.	1855.	1865.
I.	{ Sudbury	\$8,875	\$142,600	\$99,500
	{ Mystic	291,392	1,140,345	1,995,301
	{ Shawshine . . . . .	.....	13,200	46,000
	{ Charles	177,064	127,098	557,802
II.	{ Sudbury	34,700	132,750	.....
	{ Mystic . . . . .	.....	.....	.....
	{ Shawshine . . . . .	.....	.....	.....
	{ Charles	329,905	425,068	215,600
III.	{ Sudbury . . . . .	.....	.....	5,800
	{ Mystic	9,000	501,700	447,806
	{ Shawshine	15,000	.....	.....
	{ Charles	425	26,320	17,232
IV.	{ Sudbury	567,736	3,264,244	5,536,619
	{ Mystic	518,141	1,325,062	2,083,481
	{ Shawshine	90,965	118,216	83,531
	{ Charles	1,664,242	4,917,132	8,114,334

Combining the first three classes:—

I, II, III.	{ Sudbury	43,575	275,350	105,300
	{ Mystic	300,392	1,642,045	2,443,107
	{ Shawshine	15,000	13,200	46,000
	{ Charles	507,394	579,086	790,634

Ratio per square mile:—

I.	{ Sudbury	122	1,953	1,363
	{ Mystic	10,407	40,727	71,261
	{ Shawshine . . . . .	.....	388	1,353
	{ Charles	1,165	840	3,670

(See Diagram V.)

II.	{ Sudbury	475	1,618	.....
	{ Mystic . . . . .	.....	.....	.....
	{ Shawshine . . . . .	.....	.....	.....
	{ Charles	2,170	2,797	1,418

(See Diagram VI.)

Ratio per square mile—*Continued.*

		1845.	1855.	1865.
III.	{ Sudbury . . . . .	.....	.....	79
	{ Mystic	321	17,918	15,993
	{ Shawshine	441	.....	.....
	{ Charles	3	173	113

(See Diagram VII.)

IV.	{ Sudbury	7,777	44,716	75,844
	{ Mystic	18,505	47,324	74,410
	{ Shawshine	2,675	3,477	2,457
	{ Charles	10,949	32,350	53,384

(See Diagram VIII.)

I, II, III.	{ Sudbury	597	3,772	1,442
	{ Mystic	10,728	58,644	87,254
	{ Shawshine	441	358	1,353
	{ Charles	3,338	3,810	5,202

(See Diagram IX.)

Comparison of the different drainage areas on the basis of manufactures, drawn from the preceding data :—

I. By percentage of increase from 1845 to 1865.

	No. of Works.	Val. of Products.
Sudbury (including Framingham)	104	465
Mystic	155	453
Shawshine (including Billerica)	94	358
Charles	89	310

Placing these in the order of preference :—

CHARLES,	CHARLES,
SHAWSHINE,	SHAWSHINE,
SUDBURY,	MYSTIC,
MYSTIC.	SUDBURY.

If this table be correct, the Charles shows, in both respects, a less rate of gain than the Shawshine, and the Shawshine less than either the Sudbury or Mystic; the Mystic the greatest rate in number of works, and the Sudbury in value of products.

But as the reports from which these data are derived are more defective in number of manufacturing establishments than in valuation of manufactured products, and as a factory is a more fluctuating unit of measure than a dollar, the order of merit should be sought in the second column rather than the first.

2. Percentage of increase from 1845 to 1855.

	No. of Works.	Val. of Products.
Sudbury (omitting Framingham)	238	823
Mystic	155	453
Shawshine (omitting Billerica)	242	22
Charles	89	310

Placing these in the order of preference : —

CHARLES,	SHAWSHINE,
MYSTIC,	CHARLES,
SUDBURY,	MYSTIC,
SHAWSHINE.	SUDBURY.

That is to say, the Charles, Mystic and Sudbury hold the same relation to each other in both respects, and are preferable in the order named; while the Shawshine shows the greatest rate of gain in number of establishments and least in value of products.

Although it is within the range of possibility that the position of the Shawshine in the two columns should be in accordance with the facts, especially as, being a region of small productive power, its percentage gain might be greatly in-

creased by a comparatively few new establishments, yet it is more probable that there was an omission in the returns of the number of works in 1845.

The rate of growth, however, is not the measure of polluting power, nor can we, for estimates of the future, wholly depend upon the continuance of a present rate. To decide the question practically it is necessary to consider first the densities, or ratios per square mile, in the several drainage areas; we may then estimate how far the probable future increase shall affect our decision where two regions under comparison happen to be in the same year very much alike.

We continue the comparison, therefore, by a reference to the diagrams.

No. I. shows the ratio, or average number, per square mile, of manufacturing establishments in each drainage area, including Framingham on the Sudbury and Billerica on the Shawshine.

It shows that the Mystic has had the greatest number, the Shawshine the least, and the Sudbury more than the Charles, in each of the three years on which the returns were made. It shows the most steady increase in the Charles area, the most rapid late increase in the Shawshine and Sudbury, and, at the same time, a slight falling off in the Mystic. It shows that the actual growth, comparing the Charles and the Sudbury, was at first greater in the Charles, afterwards greater in the Sudbury.

No. II. is the same in character as No. I., but by reason of the omission of Framingham and Billerica corresponds more closely to the actual drainage areas, although it may give a less correct idea of the growth of these portions of the State of which the drainage areas are, as it were, centres. It will be seen that the Sudbury and Shawshine are considerably affected by the omissions, as indicated by their lower positions in this diagram, and that, as compared with Diagram I., the relative positions of the Charles and the Sudbury in 1845 and

1855 are reversed, but again restored in 1865, though the difference is slight. In other words, the Sudbury, starting at a considerable disadvantage in 1845, was gaining on the Charles in 1855, and ahead in 1865.

Diagram III. represents the same territorial extent as No. I., substituting value of products for number of works. It will be observed that the relative positions of the four regions are the same throughout and the same as in No. I. The Mystic here shows no falling off in the latter decade, considered by itself.

Diagram IV. represents the same territorial extent as No. II., substituting value of products for number of works. The relative positions at the start and at the finish are the same as in No. II., and at the second and third periods are the same as in Nos. I. and III.

Diagrams V.—IX. represent the values of different classes of manufactures, elsewhere described. No. V. represents Class I. Here, in fact, we see the predominance of the tanneries of the Mystic over the textile and paper works of the other streams. The Charles is barely ahead of the Sudbury in 1845, a little behind in 1855, and fairly in advance in 1865. The Shawshine is unrepresented in 1845, barely figures in 1855, and is about on a par with the Sudbury in 1865.

In Diagram VI. the Mystic has no representation. The cotton-works of the Charles appear in low figures throughout, with a slight advance in 1855 and decline in 1865. The Sudbury runs a parallel and inferior course in 1845 and 1855 and disappears in 1865. In Diagram VII. the products of Class III. are seen to be confined almost entirely to the Mystic, which in 1855 and 1865 is represented by considerable values. Minute values give a place to the Charles throughout, to the Shawshine in 1845, and to the Sudbury in 1865. In Diagram VIII. appear the values of products of industries of a miscellaneous character, called Class IV., and represent-

ing the total remainder. Here the Sudbury is seen to be third in valuation in 1845, second in 1855, and to take the lead in 1865, and by a large absolute valuation in proportion to its industries of other classes. The Mystic, leading all others in 1845 and 1855, is slightly behind the Sudbury in 1865. The Charles, second in value in 1845, is third in 1855 and 1865, although its figures are large as compared with those of its other industries. The Shawshine is represented by low figures throughout, with a gain in 1855 and a decline in 1865. Diagram IX. brings Classes I., II., and III. together into one large class.

We have examined the detailed information as to number and kind of manufactures in the several drainage areas, obtained in 1874 (see Appendix A), and on this basis have no difficulty in deciding that the Shawshine is first and the Mystic last in order of preference. Between the Sudbury and the Charles the comparison is closer and more difficult. To-day, the Charles, with twice the drainage area of the Sudbury, has rather more than twice as many tanneries, woollen, shoddy, felting, paper, cotton and saw-mills, while the Sudbury has more than half as many as the Charles of boot and shoe factories, print works (not yet started), grist-mills, and miscellaneous works, such as paint, dye, bonnet-frame, straw, leather-board, emery, plaster, cement, rope, brush, comb, carriage, cabinet, box and last establishments.

Comparing the whole number of establishments without regard to kind, the Sudbury has considerably more than the Charles. Comparing the number of works of the more objectionable sort, the majority of which are situated on the rivers and their tributaries (see Part Second, Description of rivers; also, Appendix A), the Charles has somewhat more than the Sudbury.

These results correspond to the showing of the diagrams. Referring again to these, it is seen that Classes I., II., and III. are represented by low figures for the Sudbury (Dia-

grams V., VII. and IX.), and by still low but higher figures for the Charles (Diagrams V., VI., VII. and IX.), while the comparison of totals without classification shows high figures for both the Sudbury and the Charles, with, generally, considerable difference between them.

The order of preference, therefore, based on the comparative risk of pollution by manufacturing refuse at the present day, will be

SHAWSHINE,
SUDBURY,
CHARLES,
MYSTIC.

Inasmuch, however, as the total industries of the Sudbury are greater in ratio per square mile than those of the Charles, and as the rate of growth of manufactures, so far as may be judged from comparable returns, has been more rapid in the former than the latter, we are led to give the following order of preference, as indicating the probable future risk of contamination by manufacturing refuse :—

SHAWSHINE,
CHARLES,
SUDBURY,
MYSTIC.

DENSITY OF POPULATION.

The density of population in the valley of a river cannot be determined with precision, since the dividing lines of townships, which form the basis of the census returns, do not coincide with those of the drainage areas. The following table gives the result of an approximate estimate of the population of the four river valleys, based in part upon the number of houses given on the county maps, and prepared at our request at the Engineer's office of the Boston Water Works :—

Population of Drainage Areas.

	Whole Drainage Area.	Per square mile.
Sudbury	16,722	229
Charles	25,149	165
Mystic	16,935	610
Shawshine	2,691	79

From this table it will be seen that, in regard to density of population and consequent danger of pollution of the waters by sewage and refuse, the rivers are to be preferred in the following order : —

SHAWSHINE,
CHARLES,
SUDBURY,
MYSTIC.

The above statement rests upon the assumption that the distribution of the population is similar in all the four drainage areas. This is approximately the case. The population is partly collected in towns, which are none of them large, Milford alone having a population of over 10,000 inhabitants, and partly scattered over the country and engaged in agricultural pursuits.

There is only one town, viz., Milford, in all the four river valleys which has pipe-drainage. The sewage of this town, which naturally drains into the Charles, can, as already mentioned, be diverted into the Blackstone; and should the Charles river be adopted as the source of supply for the city, it will of course be of the greatest importance that this diversion should be effected.

The danger of pollution of the rivers of which density of population gives the measure will therefore be chiefly that arising from indirect sewage, surface washings, and such

contaminating substances as cannot be excluded by legislation. The effect of this sort of contamination has been discussed in a previous portion of this report.

Not only the present, but the probable future, density of population in the different drainage areas is an important point to be considered in determining the comparative desirability of the four rivers in question. The future rate of increase may be determined with some degree of probability from the past, and the past rate may be estimated from a comparison of the population, as given by the decennial census returns of the towns lying wholly or in part in the different drainage areas. These statistics do not of course show the absolute population of the drainage areas at any given period, but a comparison of this sort will show the rate of increase in population of the towns lying in those sections of the State where the drainage areas are situated; and this is as near an approximation to the desired result as can well be made. The formation of new townships from portions of other townships lying, some within and others without a given drainage area, has introduced some slight inaccuracies into these estimates; but they are not considered to be of sufficient importance to affect the general result.

The following tables give the total population of the towns lying wholly or in part in the different drainage areas, every ten years, from 1800 to 1870, inclusive. The figures are taken from the State census returns, with the exception of those for 1870, which are copied from the United States census.

Population of the towns, wholly or in part in the drainage area of the

SUDBURY RIVER.

	1800.	1810.	1820.	1830.	1840.	1850.	1860.	1870.
Westboro'	922	1,048	1,326	1,438	1,658	2,371	2,913	3,601
Southboro'	871	926	1,030	1,080	1,145	1,347	1,854	2,136
Hopkinton	1,372	1,345	1,655	1,809	2,245	2,801	4,340	4,421
Marlboro'	1,735	1,674	1,952	2,077	2,101	2,941	5,907	8,475
Ashland }	Set off in 1846 from Framingham, Hopkinton and Holliston.					1,304	1,554	2,186
Framingham	1,625	1,670	2,037	2,313	3,030	4,252	4,227	4,969
Totals	6,525	6,633	8,000	8,717	10,179	15,016	20,795	25,788

Population of the towns wholly or in part in the drainage area of the

CHARLES RIVER.

	1800.	1810.	1820.	1830.	1840.	1850.	1860.	1870.
Hopkinton	1,372	1,345	1,655	1,809	2,245	2,801	4,340	4,421
Milford	907	973	1,160	1,360	1,773	4,819	9,132	9,890
Holliston	783	989	1,042	1,304	1,782	2,428	3,339	3,074
Bellingham	704	766	1,034	1,102	1,055	1,281	1,313	1,282
Franklin	1,285	1,338	1,630	1,662	1,717	1,818	2,172	2,513
Medway	1,050	1,213	1,523	1,756	2,043	2,778	3,195	3,721
Sherborn	775	770	811	899	995	1,043	1,129	1,049
Medfield	745	786	892	817	883	966	1,082	1,142
Dover	511	548	543	497	520	631	679	645
Natick	694	766	849	890	1,235	2,744	5,487	6,404
Wrentham	2,061	2,478	2,801	2,698	2,915	3,037	3,460	2,292
Norfolk }	Set off, in 1870, from Franklin, Walpole, Medway and Wrentham.							1,081
Totals	10,887	12,032	13,945	14,794	17,213	24,346	35,323	37,514

Population of the towns wholly or in part in the drainage area of the

MYSTIC RIVER.

	1800.	1810.	1820.	1830.	1840.	1850.	1860.	1870.
Winchester }	Set off in 1850 from Woburn, Arlington, and Medford.					1,333	1,937	2,646
Woburn	1,228	1,219	1,519	1,977	2,993	3,956	6,287	8,563
Stoneham	380	467	615	732	1,017	2,085	3,206	4,513
Burlington	534	471	508	446	510	545	606	626
Wilmington	797	716	786	731	859	874	919	866
Arlington	(?) 723	971	1,064	1,230	1,363	2,202	2,681	3,261
Lexington	1,006	1,052	1,200	1,543	1,642	1,893	2,328	2,277
Reading	Too small a part to be considered.							
Totals	4,663	4,896	5,692	6,659	8,384	12,008	17,964	22,752

Population of the towns wholly or in part in the drainage area of the

SHAWSHINE RIVER.

	1800.	1810.	1820.	1830.	1840.	1850.	1860.	1870.
Billerica	1,383	1,289	1,380	1,374	1,632	1,646	1,776	1,833
Bedford	538	592	648	685	923	975	843	819
Concord	Too small a part to be considered.							
Lincoln	756	713	706	709	683	719	717	791
Lexington	1,006	1,052	1,200	1,543	1,642	1,893	2,328	2,277
Burlington	534	471	508	446	510	545	606	626
Wilmington	797	716	786	731	859	874	919	863
Totals	5,014	4,831	5,228	5,488	6,258	6,652	7,183	7,242

For purposes of comparison, the total population of the towns lying wholly or in part in the different drainage areas are brought together in the following table : —

Total population in all the towns wholly or in part in the different drainage areas.

	1800.	1810.	1820.	1830.	1840.	1850.	1860.	1870.
Sudbury	6,525	6,663	8,000	8,717	10,179	15,016	20,795	25,788
Charles	10,887	12,032	13,945	14,794	17,213	24,346	35,328	37,514
Mystic	4,668	4,896	5,692	6,659	8,384	12,908	17,964	22,752
Shawshine	5,014	4,833	5,228	5,488	6,258	6,652	7,189	7,242

To facilitate comparison, the curves shown on Pl. X. have been constructed from the figures in the above table.

An examination of these curves shows that the population in and near the valley of the Shawshine river has remained comparatively stationary since 1800, while that in and near the other three valleys increased slowly till 1840, and since that time with much greater rapidity. The greatest absolute increase in population, as represented in these curves, was in the valley of the Charles, between 1850 and 1860; but this decade of rapid growth was followed by one in which the increase was much slower. In the valleys of the Sudbury and Mystic rivers the population has increased at a somewhat similar rate, and, as the total population represented is not very different in the case of these two rivers, the two curves are nearly parallel to each other.

In order to compare still more accurately the rate of growth of population in the different drainage areas, the following table has been calculated, giving the percentage growth of the towns in the four valleys for each decade from 1800 to 1870, and also the percentage growth for the whole of this period.

Percentage Growth of Towns in Drainage Areas.

	1800-10.	1810-20.	1820-30.	1830-40.	1840-50.	1850-60.	1860-70.	1800-70.
Sudbury	2.11	20.06	7.45	16.70	47.50	38.40	24.00	295.06
Charles	10.51	15.90	6.08	16.35	41.44	45.11	6.18	244.58
Mystic	4.88	16.26	16.99	25.90	53.96	39.17	26.65	387.41
Shawshine	-3.61	7.96	4.97	14.03	6.29	8.07	0.73	44.43

An examination of this table, or of the curves constructed from it (see Pl. XI.), shows that the growth of towns in and near the valley of the Shawshine has been uniformly less rapid than in the other three valleys.

The increase of population in and near the valley of the Charles has, in general, been less rapid than in that of the Sudbury, and in that of the Sudbury less rapid than in that of the Mystic. The most important exception to the above statement is in the case of the Charles river between 1850 and 1860. Here the growth was more rapid than in any of the other river valleys at the same period, but this rapid increase was offset by a remarkably slow growth in the following decade.

If we regard, therefore, growth of population in the past as an indication of the future probable rate of increase, the four rivers are to be preferred in the following order as sources of water supply :—

SHAWSHINE,
CHARLES,
SUDBURY,
MYSTIC.

This, it will be seen, is the same order in which the rivers stand when considered with reference to absolute density of population in their respective valleys at the present time.

In this connection it is important to call attention to a sub-

ject which will doubtless have a bearing upon the growth of population in the immediate neighborhood of the streams, viz.: the relation of the railroads to the rivers. In this respect the Sudbury is less favorably situated than any of the others, for the Boston & Albany R.R. runs close along its banks for a distance of nine miles, *i. e.*, from just above South Framingham to Westboro'. In the case of the Mystic river, the Boston, Lowell & Nashua R.R. runs for five or six miles close to its banks, and those of the Abajonna, its principal tributary. In the valley of the Charles, the only points where the railroads run close to the streams, are just below Milford, where the Milford Branch R. R. runs along the bank of the river for a distance of about two miles, and between Medway and Bellingham, where the Western Division of the N. Y. & N. E. R. R. is close to the river for about the same distance. In the valley of the Shawshine the railroads nowhere run in close proximity to the streams for any considerable distance.

It cannot, of course, be predicted with certainty that a dense population will spring up along a river bank wherever a railroad runs in its immediate neighborhood, for this may be prevented by a variety of local causes; yet, in consideration of the recognized influence of railroads on the growth of towns and villages along their lines, the indication thus afforded by their location of the future probable distribution of the population should not be altogether disregarded.

CHEMICAL COMPOSITION.

In considering the analyses of the Charles, Sudbury and Shawshine rivers, it must be remembered that the waters had not had the benefit to be derived from storage in large reservoirs, and consequently that the water, as delivered to consumers in the City, will be much better in quality than that found in the river beds. If no storage basins were proposed, none of these river-waters could be recommended for

domestic use, except, possibly, the Shawshine, and even this could not be expected to have at all seasons, and under all circumstances, the same degree of purity as during the season of drouth just passed, when there were no surface runs, and the water was, consequently, almost purely a spring water.

We have been unable, on account of the limited time allowed us, to collect and examine more than one specimen from each of the different points on the various rivers selected as the most suitable ones for collection; and since it is important in forming an opinion upon the average composition of a running water, that as large a number of analyses as possible should be made of specimens collected at different seasons, we have compared our results with those of Prof. W. R. Nichols, of the Mass. Institute of Technology, as published in the last report of the Mass. State Board of Health, and in City Doc. No. 38, Appendix II. We have compared with our own, only those analyses of Prof. Nichols which were of waters falling within the limits of our investigations.

Prof. Nichols' analyses of the Sudbury river may be found on page 104; of the Charles (between South Natick and Newton Upper Falls), on page 98; of the Mystic, on page 142; and of Lake Cochituate, on page 125 of City Doc. No. 38.

It will be seen that the water of the Shawshine, that of those head-waters of the Charles and the Sudbury, on which there are no sources of pollution, and that of the Abajonna above the Chemical Works, do not differ materially from each other in chemical composition, nor from the average Lake Cochituate water, as shown by Prof. Nichols' analyses, excluding those of Pegan brook.

The average composition of the water of the Charles and Sudbury rivers, taking into consideration the analyses of the worst as well as the best samples, is much better than that of

Mystic-lake water collected at the gate-house and Bacon's bridge, although the river-waters have not received the benefit of storage.

By a careful comparison of all of the analyses at our disposal of the water of the various streams, we would arrange them according to their chemical composition, in the order of relative desirability, as follows :—

SHAWSHINE,
SUDBURY,
CHARLES,
MILL BROOK,
MYSTIC.

The following is a statement of the number of analyses from which our deductions have been drawn :—

Charles river	(Wood)	.	17	
“ “	(Nichols)	.	18	
“ “ Total	.	.	.	35
Sudbury river	(Wood)	.	9	
“ “	(Nichols)	.	14	
“ “ Total	.	.	.	23
Shawshine river	(Wood)	.		3
Mill brook	(“)	.		3
Mystic river	(“)	.	6	
“ “	(Nichols)	.	10	
“ “ Total	.	.	.	16
Lake Cochituate	(Nichols)	.		17
Total number of analyses	.	.	.	97

OPPORTUNITIES FOR STORAGE.

To determine in which of the four schemes the best storage facilities are provided, we must consider

I. *The contents of the storage basins in proportion to the*

drainage area. — Upon this will depend, other things being equal, the length of time during which the water will remain stored and consequently the opportunity it will have for self-purification.

II. *The proportion of shallow flowage to the total contents of the basins.* — This will give a measure of contamination of the water likely to be produced by the growth and decay of vegetable matter in those parts of the basins where the depth is insufficient to prevent such growth.

III. *The number and arrangement of the basins.* — Upon this will depend the possibility of holding back a portion of the water-supply which may have become impure from local causes, and giving it the benefit of prolonged storage.¹

In regard to the first of these three questions, approximate estimates, made at our request in the Engineer's office, have shown that the Sudbury, Charles and Mystic river schemes do not differ greatly from each other, while in the valley of the Shawshine nearly 50 % more storage is provided for each square mile of drainage area than in any other river valley. In this respect, therefore, the Shawshine-river scheme possesses a decided advantage over the others.

To enable us to decide upon the relative merits of the four schemes considered with reference to the second of the points above enumerated, or, in other words to determine in which scheme for water-supply the water will be least likely to be contaminated with the products of vegetable decomposition resulting from shallow flowage, the following approximate estimates have been furnished us by Mr. Fteley.

¹ For instances where the water of lakes and ponds has been thus rendered impure, see report of the Cochituate Water Board to the City Council of Boston, for the year 1854.

	No. of gals. of storage per acre of shallow flowage (i. e., less than 5 ft. deep).
Sudbury	27,000, 00
Charles	31,000,000
Mystic	7,600,000
Shawshine	30,000,000

From this table it will be seen that the impurities arising from the decomposition of the vegetable matter on each acre of shallow flowage will be distributed, in the case of the Mystic river, through 7,600,000 gallons of water, and in the case of the other three rivers through amounts varying from 27 to 31 millions of gallons. In other words the waters of the Charles, Sudbury and Shawshine river basins will not differ materially from each other in respect to the amount of vegetable contamination derived from shallow flowage, while the water of the Mystic-river basins may be expected to contain about four times as much of this sort of impurity as that of the other rivers. Taking the figures of the above table as a guide, the four rivers in question are, in respect to this sort of contamination, to be preferred in the following order :—

CHARLES,
SHAWSHINE,
SUDBURY,
MYSTIC.

It should be mentioned here that the reason why the Sudbury river appears in this list as somewhat inferior to the Charles and Shawshine rivers is, that Whitehall pond, with its large extent of shallow flowage, is included among the storage basins of this valley. It must be borne in mind, however, that the water of this pond will flow twelve miles along the bed of the river, and pass through Basins II. and I.

and Farm pond before reaching the conduit, and will thus have an excellent opportunity for self-purification.

From what has been said, in the second part of this report, of the number and arrangement of the proposed storage basins in the different drainage areas, it is evident that the four schemes differ greatly from each other in the facilities which they offer for giving the benefit of prolonged storage to water which has become impure from local or temporary causes. A careful examination of the plans of all the proposed storage basins (as given in the Engineer's reports), with a view of determining the relative merits of the four schemes in this respect, has led us to the opinion that the rivers are to be preferred in the following order : —

SUDBURY,
MYSTIC,
SHAWSHINE,
CHARLES.

It will thus be seen that our estimate of the relative merits of the storage facilities offered by the different schemes will vary greatly, according as we consider the storage basins with reference to the opportunities offered for the self-purification of water, or with regard to the probable contamination of the water by the decomposition of vegetation growing in the shallow portions, or in respect to the facilities provided for giving the benefit of prolonged storage to a portion of the water-supply, which, from local causes, may have become unfit for use. Although, as above stated, the size of the proposed storage basins relatively to the drainage area is much greater in the valley of the Shawshine than in that of the other rivers, yet it is probable that the storage basins provided in *all* the schemes are sufficiently extensive to allow ample time for the self-purification of the water. If, therefore, we leave this consideration out of sight, the question is much simplified.

The Mystic-river scheme is, as we have seen, decidedly inferior to the other three in respect to the amount of shallow flowage in the proposed storage basins, while these three, though essentially alike in this respect, differ greatly from each other in the facilities which they offer for the prolonged storage of portions of the water-supply.

With regard, therefore, to the general question of storage facilities, the four schemes are to be preferred in the following order:—

SUDBURY,
SHAWSHINE,
CHARLES,
MYSTIC.

CONCLUSION.

The four sources of supply, as hereinafter enumerated, are placed in the order of preference (the best being first, and so on) as to the respective matters under which they are arranged.

1. Character of the water.

(a) Color, taste and general appearance.

1. SHAWSHINE.
2. CHARLES.
3. SUDBURY.
4. MYSTIC.

(b) Chemical analysis.

1. SHAWSHINE.
2. SUDBURY.
3. CHARLES.
4. MYSTIC.

2. Opportunities for storage.

1. SUDBURY.
2. SHAWSHINE.
3. CHARLES.
4. MYSTIC.

3. Sources of pollution.

(a) Population, present.

1. SHAWSHINE.
2. CHARLES.
3. SUDBURY.
4. MYSTIC.

(b) Population, future.

1. SHAWSHINE.
2. CHARLES.
3. SUDBURY.
4. MYSTIC.

(c) Manufacturing refuse, present.

1. SHAWSHINE.
2. SUDBURY.
3. CHARLES.
4. MYSTIC.

(d) Manufacturing refuse, future.

1. SHAWSHINE.
2. CHARLES.
3. SUDBURY.
4. MYSTIC.

The Mystic being in all these respects the last in order, and therefore the least desirable, we may pass to the consideration of the three remaining rivers. Of these, the Shawshine is best in every respect excepting opportunities for storage, in which it is surpassed by the Sudbury alone. It remains to compare the Sudbury and the Charles. The Sudbury is preferable to the Charles in the results of chemical analysis, in opportunities for storage, and in present risk of contamination by manufacturing refuse. The Charles is superior to the Sudbury in the color, taste and general appearance of the water, and in risk of contamination by present and future population, and by future manufacturing refuse. The probability is, therefore, that chemical analysis will turn ultimately

in favor of the Charles, leaving to the Sudbury of the future the sole advantage of superior storage facilities.

The resultant estimate, therefore, of the sanitary qualities of the four rivers places them in the following order of preference : —

1. SHAWSHINE.
2. CHARLES.
3. SUDBURY.
4. MYSTIC.

It will be asked, —

I. How do the differences between each two successive rivers in the above list compare with each other?

II. To what extent is this order determined by conditions which may be affected by legislative enactment?

III. Should no financial considerations be allowed to affect the estimate thus formed?

In reply it may be said : —

1. The Mystic river, even without reference to the direct sources of pollution, is, on account of the dense population in its valley and the inferior storage facilities, *much less* desirable than the other rivers as a source of water-supply.

Between the other three rivers the difference is less marked, though the Shawshine is, for reasons enumerated above, distinctly superior to the Charles and Sudbury. Though the two latter rivers differ at present less from each other than from either the Shawshine or the Mystic, this difference will be probably much more marked in the future.

2. That the natural, *uncontaminated* waters of all of the rivers under consideration may, by proper storage, be made sufficiently pure for domestic use; but in order to render them uncontaminated, and to ensure their future purity, *all* existing sources of pollution must be removed.

3. That, in order to remove all existing sources of pollu-

tion, and to prevent others from being established in the future, suitable legislative enactment must be obtained.

4. That the inability to procure such legislative enactment in regard to either river would be sufficient reason for rejecting that river as a source of water-supply.

5. That, as the sanitary question is paramount to all other considerations, no scheme involving imperfect storage facilities or insufficient legislative protection of the waters should be adopted from motives of economy.

It must be remembered, however, that, even with the most favorable legislative act and the most perfect engineering schemes, it will be impossible to prevent a certain amount of pollution from entering a river flowing through a thickly settled district.

SUPPLEMENT.

Subsequent to our appointment to consider and report upon the sanitary qualities of the Sudbury, Charles, Mystic and Shawshine waters, the question involved in the following order was referred to us by the Joint Standing Committee on Water : —

“Ordered, That the Joint Standing Committee on Water consider and report upon the necessity and expediency of using Lake Cochituate as an intermediate storage basin for the diffusion and purification of the Sudbury-river water, if said river is adopted for an additional supply.”

Unfortunately, the wording of this order does not render it clear whether we are to consider and report upon the use of Lake Cochituate as a storage reservoir for the Sudbury-river water without its having received previous storage, or after it has been previously stored in basins according to the plans proposed in the Sudbury-river scheme.¹

¹ City Doc. No. 38.

It is needless to add anything to what has already been said in the foregoing report upon the effect of storage in general upon water. There can be no doubt that the effect of storing in Lake Cochituate the Sudbury-river water, as it runs in the river bed at present, would be very beneficial ; but if the lake is to be the only storage reservoir for its purification, it would, in our opinion, be overtaxed, and the benefit which would result from such storage would be more than counterbalanced by the injury which would be done to the lake water by admixture with the highly colored and more impure water of the Sudbury river ; since, if so large an amount is allowed to flow through the lake as will be necessary several years hence, its passage will necessarily be too rapid to permit of its thorough purification, and it will probably be delivered to consumers in the city quite highly colored from admixture with the Sudbury river and Beaver Dam brook water, both of which are very deeply tinged.

The amount of injury, however, which would be done to the water of the lake, as well as the beneficial effect upon that of the river, would depend very much upon the selection of the point at which the connection between the river and the lake would be made. If the Sudbury river is to be connected with the Beaver Dam brook, as in 1872, and its water consequently introduced into the southern division of the lake, not only would the benefit to the one be greater, but the injury to the other would be much less, than if introduced into the northern division near the gate-house.

After the connection between Farm pond and Lake Cochituate was made in 1872, it will be remembered, the water of the latter was very turbid and impure. No argument can be drawn from this, however, against such connection, since it is by no means certain how much of this impurity was due to the Sudbury-river water, and how much to the previous exposure to the air of two hundred

acres or more of the lake bottom, which is usually covered with from five to seven feet of water.

This plan, therefore, cannot be as highly recommended as the excellent system of storage basins which have been proposed upon the Sudbury river itself.

Concerning the value of Lake Cochituate as an additional storage reservoir to those already proposed upon the river itself, we can only state, that the greater the amount of storage which a water receives the better. It is quite probable, however, that the water of Sudbury river, in Basin No. I., or in Farm pond, will be quite as good as that of Lake Cochituate itself; and it is also probable, that the benefit to be derived from the additional storage in the lake would be counterbalanced by the impurities which it would receive in flowing through the ditch from Farm pond to Beaver Dam brook, and through the bed of the latter to the lake.

In our opinion, therefore, if storage basins are to be erected upon the Sudbury river itself, as in the proposed plan, the use of Lake Cochituate as an additional storage reservoir is not necessary. If, on the other hand, it is proposed not to erect any storage basins upon the river itself, the use of Lake Cochituate as an intermediate storage reservoir for the purification of the Sudbury-river water, is not expedient (except temporarily in times of necessity), owing to the injurious effect which would be exerted upon the water of the lake.

In connection with this subject, it may be well to consider two very obvious sources of pollution in Lake Cochituate, the removal of both of which would render its water more suitable for domestic use. One of these, Pegan brook, which empties into the lake, receives a portion of the drainage of Natick, numerous sink-drains and privies discharging their contents directly into the brook. This should be diverted, as has already been proposed.¹ The other is the

¹ See order passed in Common Council, Oct. 22, 1874.

large extent of shallow flowage in the southern division, which, in seasons of drouth like that just passed, is exposed to the atmosphere to the extent of two hundred acres or more. This gives rise to a large amount of vegetable growth, which, in decaying, imparts to the water a correspondingly large quantity of decomposing vegetable matter, the effect of which has been spoken of in the preceding report. The prevention of this, by dredging or otherwise, would necessarily, at such seasons, have a very beneficial effect upon the water of the lake.

CHAS. W. SWAN, M.D.

EDW. S. WOOD, M.D.

H. P. BOWDITCH, M.D.

APPENDIX A.

REPORT OF MR. D. W. CUNNINGHAM ON POPULATION AND MANUFACTURES.

OFFICE OF BOSTON WATER WORKS, }
ADDITIONAL SUPPLY, }
SOUTH FRAMINGHAM, Oct. 9th, 1874.

MESSRS. CHARLES W. SWAN, M. D., EDWARD S. WOOD,
M. D., HENRY P. BOWDITCH, M. D. :—

Gentlemen,—Herewith I forward a list of all the manufacturing establishments within the drainage areas of the several water-sources, and the population of each per square mile.

Respectfully submitted,

(Signed,)

DAVID W. CUNNINGHAM,

Prin. Asst. Eng'r New Supply.

Charles River.

MILLS ON THE STREAM, ABOVE DEDHAM, AND USING WATER POWER.

	Towns.	Employés.
Two grist-mills	Milford and So. Natick.	5
One woollen-mill (burnt down)	South Milford.	120
One saw and grist-mill	Bellingham.	3
Two shoddy-cloth factories	North Bellingham.	125
One shoddy factory	Bellingham.	6
One woollen flock's mill	North Medway.	4
One thread factory, two batting-mills	Medway.	40
Three coarse paper factories	Rockville and Needham.	20
One saw-mill, batting and bonnet frames	Medway.	12
One leather-board manufactory	South Natick.	12
Total, 15 factories; employing		347

TRIBUTARIES TO CHARLES RIVER.

1st Tributary.	<i>Beaver pond outlet</i> (left bank).		0
2d "	<i>Stall brook</i> (left bank).		
	One saw-mill		2
3d "	<i>Hopping brook</i> (left bank).		
	Two saw-mills		9
4th "	<i>Mine brook</i> (right bank).		
	Three saw-mills	Franklin.	16
	One felting-mill	"	28
	Two shoddy-mills	"	35
	One machine-shop	"	10
5th "	<i>Chicken brook</i> (left bank).		
	One machine-shop	West Medway.	3
	Two saw-mills	"	10
6th "	<i>Shepherd's brook</i> (right bank).		
	One saw-mill	Franklin.	2
	One shoddy-mill	"	4
	<i>Carried forward</i>		466

TRIBUTARIES TO CHARLES RIVER. — *Continued.*

Tributary.		Towns.	Employés.
	<i>Brought forward</i>		466
7th Tributary.	<i>Mill river</i> (right bank).		
	Two cotton-mills	Norfolk.	100
	One felting-mill	“	200
	One grist-mill	“	
	One shoddy-mill	“	
	One cabinet-shop	Franklin.	2
	One edge-tool factory	“	6
8th “	<i>Stop river</i> (right bank).		
	One wrapping-paper mill	Norfolk.	12
	Three saw-mills (two not in use) . .	“	1
	One shoddy-mill	“	3
	One grist-mill	Medfield.	1
9th “	<i>Medfield brook</i> (right bank).		
	Two carriage-factories	“	30
10th “	<i>Harding's brook</i> (right bank).		
	Two saw-mills	“	8
11th “	<i>Bogistow brook</i> (left bank).		
	One nail-factory	East Holliston.	15
	One machine-shop (not at work) . .	“	0
	Four saw-mills (one not in use) . .	Medway and Holliston.	15
	One saw and grist-mill	Holliston.	4
12th “	<i>Ware's brook</i> (left bank).		
	One wheelwright and blacksmith shop	Sherborn.	3
	One saw and grist-mill (not used) . .	“	0
13th “	<i>Savin's brook</i> (left bank).		
	One saw and one grist-mill	South Natick.	2
14th “	<i>Bacon's brook</i> (left bank).		
	Old grist mill (not used)	“	0
	<i>Carried forward</i>		863

CHARLES RIVER TRIBUTARIES.— *Concluded.*

Tributary.		Towns.	Employés.
	<i>Brought forward, ...</i>		868
15th Tributary.	<i>Waban brook</i> (left bank).		
	Wood's paint works	Natick.	10
	Woods' cement brick factory (burned)	"	0
	Jennings' saw-mill and shoe-knife factory	"	6
16th "	<i>Trout brook</i> (right bank).	Dover.	0
18th "	<i>Noanet's brook.</i>	"	
	One old saw and keg factory (not at work)	Dedham.	0
20th "	<i>Schlusemeyer's brook.</i>	"	
	One saw and planing-mill (not at work)	"	0
Total, 60 mills	Total number employed in mills that are run by water power, about		884

Charles River.

FACTORIES NOT USING WATER POWER.

MANUFACTURE.	Towns.	Employés.
Gas works	Milford.	
Two box-factories and saw-mills	"	
Paint-factory	"	
Machine-shop	"	
Milford dye-house	"	
Last-factory	"	
Boot-form factory	"	
Sixteen boot and shoe factories	"	
Two boot and shoe factories	Hopkinton.	
Fourteen shoe-factories	Holliston.	
One copper-pump works	"	6
One comb-factory	"	
One shoe-factory	Bellingham.	

*Charles River.*FACTORIES NOT USING WATER POWER— *Continued.*

MANUFACTURE.	Towns.	Employés.
<i>Brought forward</i>		6
Four straw-factories	Franklin.	
One boot-factory	"	6
One sash and blind factory	"	
One felting mill (steam)	"	20
One tannery	"	25
Nine shoe-factories	Medway.	
One bell-foundry	"	
One organ-factory	"	
Two vegetable-canning factories	"	100
Two shoe-factories	Sherborn.	
One piggery	"	
One cider-mill	"	
Two straw-factories	Medfield.	
One brush-factory	"	
One tannery	"	
One shoe factory	"	
Total		157

Sudbury River.

FACTORIES ON THE MAIN STREAM ABOVE FARM POND.

MANUFACTURE.	Towns.	Employés.
Two woollen-factories (horse blankets)	Southboro'.	125
One shoddy and batting-factory	Ashland.	3
Four saw-mills	Westboro' and Ashland.	8
Three grist and plaster-mills	Westboro' and Ashland.	13
Dwight printing company (not yet started)	Ashland.	5
Two emery-mills (only one using water-power)	"	19
<i>Stony brook (branch of Sudbury).</i>		
Two grist-mills	Southboro'.	4
One grist and plaster-mill	"	2
One saw and grist-mill	"	2
One old machine-shop (not in use)	"	0
<i>Whitehall brook.</i>		
One saw and grist-mill	Hopkinton.	1
One boot and shoe-factory	"	30
One twine-factory	"	0
<i>Cold Spring brook.</i>		
Two saw and grist-mills	Hopkinton.	5
<i>Angle brook.</i>		
Two old mill-sites (not in use)	Marlboro'.	0
Total . . . . .	.....	220

Sudbury River.

FACTORIES NOT USING WATER POWER.

MANUFACTURE.	Towns.	Employés.
Seventeen boot and shoe-factories	Marlboro'.	
One machine-shop (steam)	"	
One box-factory (steam)	"	
One cider-mill	"	
One gas-works (not yet started)	"	
Three boot and shoe-factories	Westboro'.	
Six straw-factories	"	
Four sleigh-factories	"	
One planing-mill and box-factory	"	
One brick-yard	"	
Four boot and shoe-factories	Hopkinton.	
One steam box-factory	"	
Eight boot and shoe-factories	Ashland.	
Two boot and shoe-factories	Southboro'.	
One brickyard	"	

Shawshine River.

	Towns.	Employés.
<i>Factories upon the Stream.</i>		
William Ashby's saw and grist-mill and cider-mill . .	Bedford.	3
<i>Vine brook.</i>		
One saw and planing-mill	"	1
One saw, grist and cider-mill	Burlington.	2
One block-printing establishment	"	16
Total		22

Mystic Pond.

MANUFACTURE.	TOWNS.	No. of Hides per week.	Employés.
<i>Factories on the Abajonna river above Mystic pond.</i>			
Four tanneries and curry-shop	Winchester & Woburn.	1,400	173
One glue-stock factory	E. Woburn.		50
One glue-factory (about starting)	"		
One watch-hand factory	"		10
One saw and grist-mill	N. Woburn.		4
One saw-factory	E. Woburn.		12
One rope-walk	"		7
One saw and planing-mill	Winchester.		10
<i>Factories on the West or Horn pond branch.</i>			
Woburn gas-works			
Sixteen tanneries and currier's shops . .	Winchester & Woburn.	6,775	1,103
Two tanneries and currier's shops . . .	Cummingsville.	1,600	265
One wool-scouring establishment; scours 4,000 lbs. wool per day, from which 2,000 lbs. of grease or dirt are thrown into stream. }	Winchester.		15
One mahogany saw-mill	"		8
One glue-factory	Cummingsville.		
<i>Stoneham branch.</i>			
Four tanneries and curriers' shops		1,550	196
Fourteen shoe-factories			970
Two inner-sole and stiffening-factories . .			120
One saw and planing-mill			24
One last-factory			8
<i>Factories within the Mystic water-shed not on the stream.</i>			
Three currying-shops	Winchester.		70
One grain-mill (large)	Woburn.		
Five currying-shops	Woburn Centre.	2,400	142
Four " "	N. Woburn.	160	26
<i>Amount carried forward</i>			3,213

	Towns.	No. of Hides per week.	Employés.
<i>Amount brought forward</i>	<i>.</i>	<i>.</i>	3,213
One stiffening and heel-factory	N. Woburn.		3
One rope-walk	E. Woburn.		6
One old privilege, formerly a grist-mill . .	"		0
Nine ladies' shoe-factories	Woburn.		150
Two " " "	N. Woburn.		100
Total 81 factories.			
Total number employed in 81 factories within the Mystic drainage area . . .	<i>.</i>	<i>.</i>	3,472

Population (approximate).

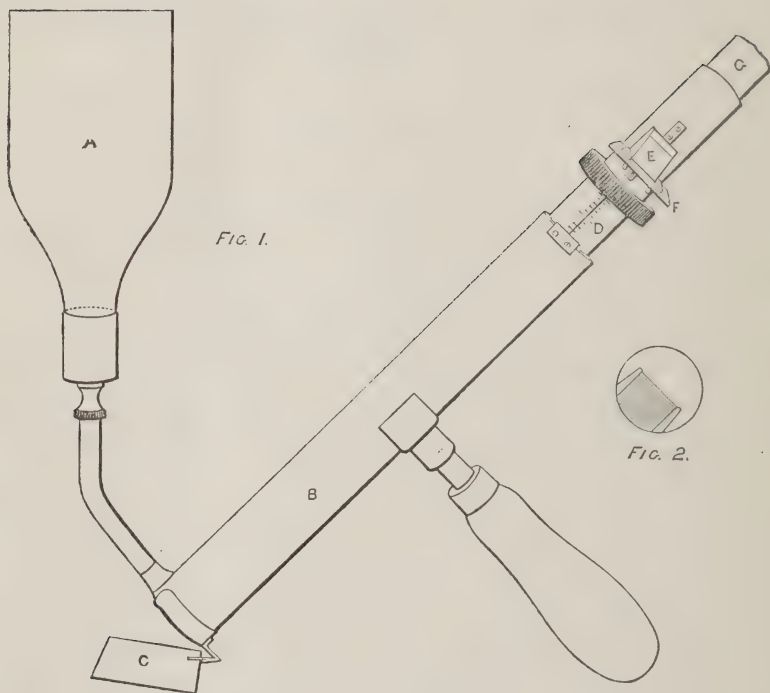
<i>Charles river</i> , above South Natick, whole drainage area	25,149
" " per square mile	165
<i>Sudbury river</i> , whole drainage area	16,722
" " per square mile	229
<i>Mystic pond</i> , drainage area	16,935
" " per square mile	610
<i>Upper and Lower Mystic ponds</i> , whole drainage area	20,625
" " " per square mile	618
<i>Shawshine river</i> , above old canal crossing, whole drainage area . .	2,691
" " per square mile	79

APPENDIX B.

OBSERVATIONS AND EXPERIMENTS ON COLOR AND STORAGE.

It soon became evident in the course of our investigations that some method of estimating and comparing the depth of color of the various waters, more accurate than that afforded by the unaided vision, was a decided desideratum. Our attempts to supply this want resulted finally in the construction of an instrument of which the following woodcut gives a diagrammatic representation on a scale of about three and a half inches to the foot. The instrument consists of two tubes, B and D (Fig. 1), sliding water-tight, one within the other, the lower end of each tube being closed with a disc of plate glass. Into the large tube, B, just above the plate-glass disc, is inserted a piece of small tubing which terminates in a funnel-shaped receiver, A. Water poured into this receiver will therefore pass into the space between the two glass discs, entirely filling the outer tube when the inner tube is withdrawn, and again returning to the receiver when the inner tube is pushed down so that the glass discs come in contact with each other. Through an opening near the upper end of the smaller tube, D, is inserted one end of a rhombic prism, E, in which total internal reflection takes place twice.

This prism extends half-way across the inner tube, D, so that an eye, looking through the eye-piece, G, sees the field of vision nearly half filled by the surface of the prism. This appearance is represented in Fig. 2. - The eye-piece, G, con-



tains a single lens, which is focused upon the upper surface of the prism. The position and angles of the prism are such that a ray of light outside of and parallel to the tube B is reflected first directly into the tube D, and then parallel to its axis, thus emerging from the prism and entering the eyepiece alongside of the rays of light which have passed through the two plate-glass discs. It will thus be seen that the conditions for comparing the color and intensity of these two sources of light are as favorable as possible. A piece of white card, C, fastened at the lower end of the larger tube, throws a uniform white light through the tubes B and D, and also along the outside of the tube B into the prism, E.

In using the instrument, a piece of brownish-yellow glass, F, is placed in front of the prism, E, and the water whose color is to be determined is poured into the receiver, A. The inner tube is then withdrawn until the column of water between the two glass discs is sufficiently long to give to the light passing through it a color equal to that imparted by the colored glass, F, to the light passing through the prism, E. The length of this column of water, which will of course vary inversely with the depth of the color, can be determined by means of the scale on the inner tube, D.

By this means the relative intensity of color of various specimens of water may be determined with considerable accuracy.

Color. — In order to determine if possible upon what constituent of river water its color depends, careful color determinations were made of a number of samples by means of the instrument above described. In the following table, giving the results of chemical analysis, these samples are arranged in the order of their color, beginning with the darkest, the figures in the column headed "color" giving the length in inches of the column of water capable of imparting to transmitted light a color equivalent to that of the brownish-yellow glass used as a standard.

Parts in 100,000.

	Color.	Ammonia.	"Albuminoid" Ammonia.	Inorganic.	Organic.	Total Residue.	Chlorine.
Sudbury river, above Ash- land }	2.42	0.002	0.031	4.2	1.8	6.0	0.8
Sudbury river, below Ash- land }	2.72	0.0034	0.036	4.8	3.4	8.2	1.2
Mine brook, near source . . .	3.37	0.0054	0.032	3.0	3.8	6.8	0.6
Winthrop pond, above Hol- liston }	3.69	0.008	0.023	2.6	3.0	5.6	1.0
Jar brook below Holliston .	3.85	0.010	0.042	2.6	3.0	5.6	1.75
Cedar Swamp pond, above } Milford }	4.87	0.018	0.024	2.6	2.2	4.8	0.8

An examination of this table shows that the only constituent of the water which undergoes a progressive change corresponding to the color is the free ammonia. This gas is seen to increase in amount as the color diminishes, suggesting the possibility that the color may be due to a nitrogenous substance whose decomposition gives rise to ammonia. Whether this is really the case, or whether the apparent relation between color and amount of No. 3 is only a coincidence, is a question requiring for its solution more extensive investigations than the time at our disposal permitted us to undertake.

Storage.—The following experiments were made with the view of investigating the nature of the process by which the purification of water is effected in storage basins.

A quantity of water was collected from the Sudbury river, and a portion of it analyzed. Its color was also determined by means of the instrument above described. The water was then filled into three tall glass jars, which were tightly closed and then allowed to stand for fifteen days, the first in absolute darkness, the second in the diffused light of the laboratory, and

the third in a southern window, where it was exposed to the direct rays of the sun during the greater part of the day.

Another portion of the same water was placed in a large bottle with a stop-cock at the bottom, through which it was allowed to flow drop by drop from a height of ten feet into a receiver placed below. When all the water had passed through, it was again returned to the bottle, and the process repeated ten times. Enough distilled water was then added to make good the loss by evaporation during the experiment, and the color and chemical composition were determined. In this experiment the greatest possible opportunity was given for the action of the oxygen of the air, and all those changes in the water which depend upon the oxidation of organic substances would naturally be produced to their greatest extent.

In the three first-mentioned experiments, on the other hand, a determination of the color and chemical composition of the water gave us the means of estimating the effects of light of varied degrees of intensity in the absence of contact with the external air. It would be extremely hazardous to draw conclusions from a single set of experiments, which was all that the limited time at our disposal permitted us to make. It will be sufficient, therefore, to say that in all the experiments there was a diminution of color, and that in the three jars exposed to light of varied intensity the diminution increased with the intensity of the light.

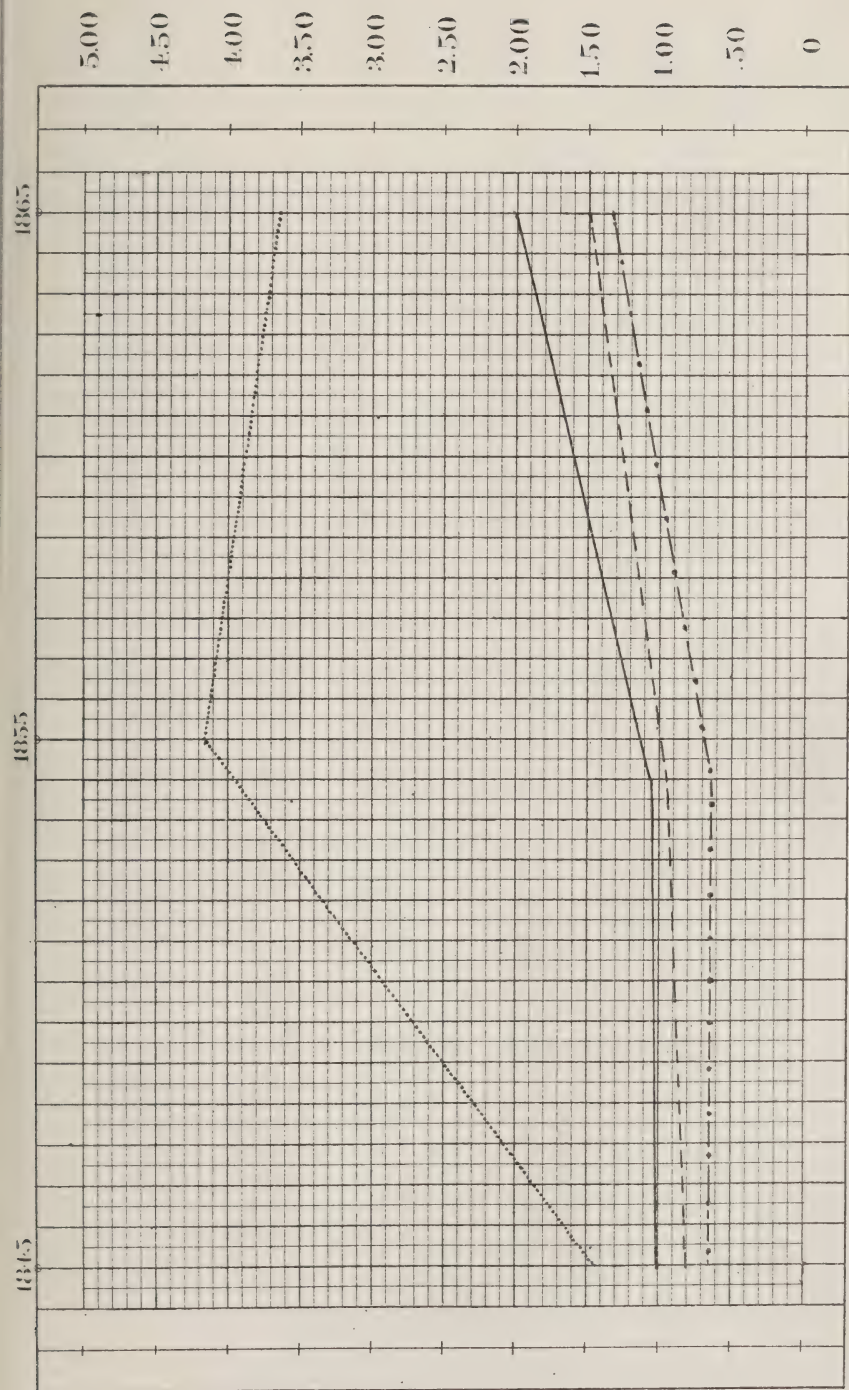
In the water exposed to oxidation by dropping slowly through the air no greater change of color was noted than in that which was exposed in a closed jar to the diffused light of the laboratory.

From the following table, giving the results of chemical analysis, it will be seen that there was a diminution of the solid constituents, both organic and inorganic, which in a general way corresponded to the diminution of color, while

the relation between ammonia and color was not so evident as in the observations previously described.

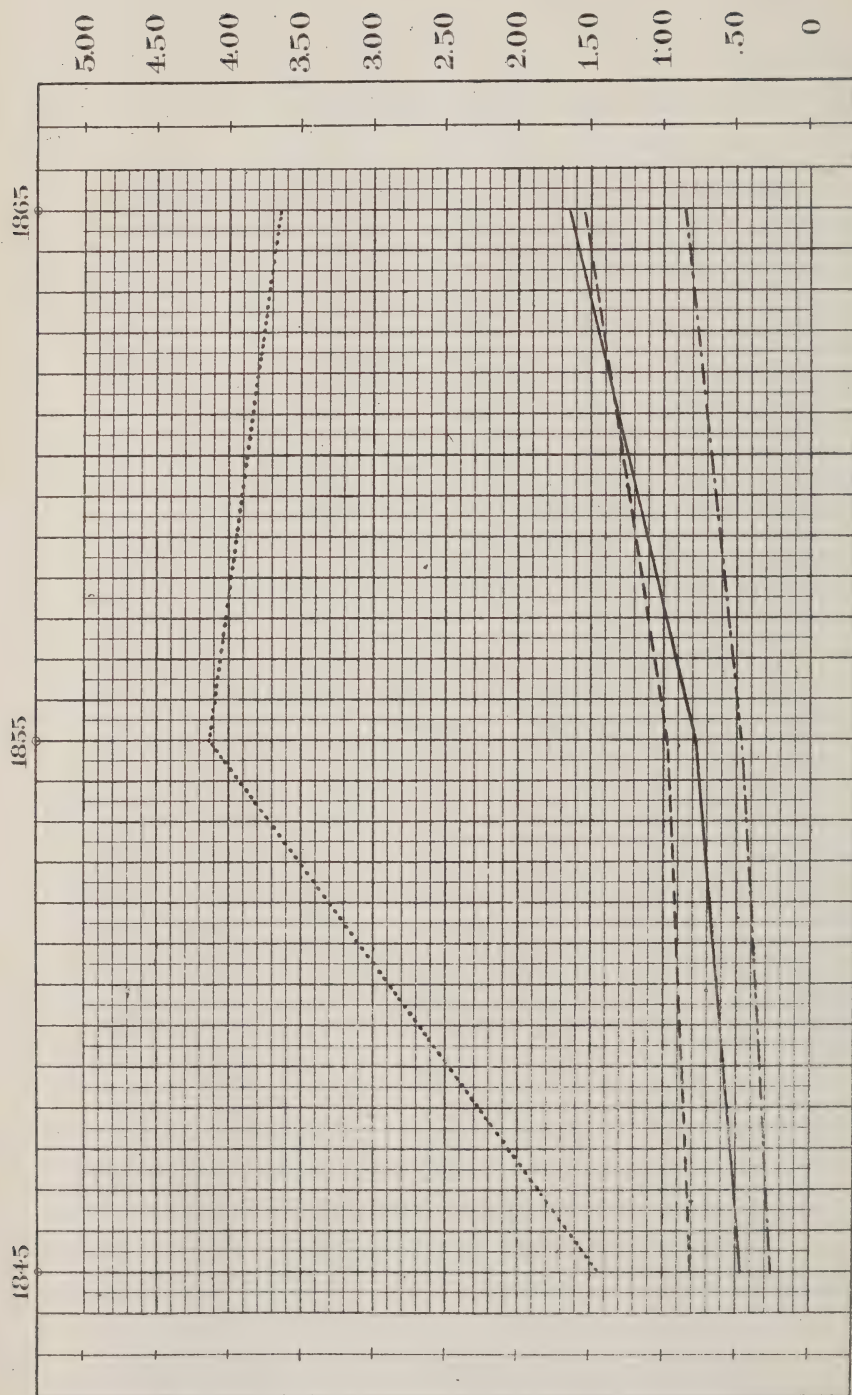
Parts in 100,000.

	Color.	Ammonia.	"Albuminoid." Ammonia.	Inorganic.	Organic.	Total Residue.	Chlorine.
Water when received	4.30	0.0016	0.029	3.6	3.8	7.4	0.8
After fifteen days in darkness	5.25	0.008	0.025	3.4	3.2	6.6	0.8
After fifteen days in diffused light }	5.82	0.005		2.8	3.6	6.4	
After fifteen days in sunlight	6.20	0.0016	0.027	2.8	3.2	6.0	0.7
After passing ten times through bottle }	5.60	0.0132	0.0228	2.8	3.6	6.4	0.7



Ratio per square mile of manufacturing establishments in each area.
(Including Framingham & Billerica.)

Mystic..... Charles--- Sudbury— Slawshine----

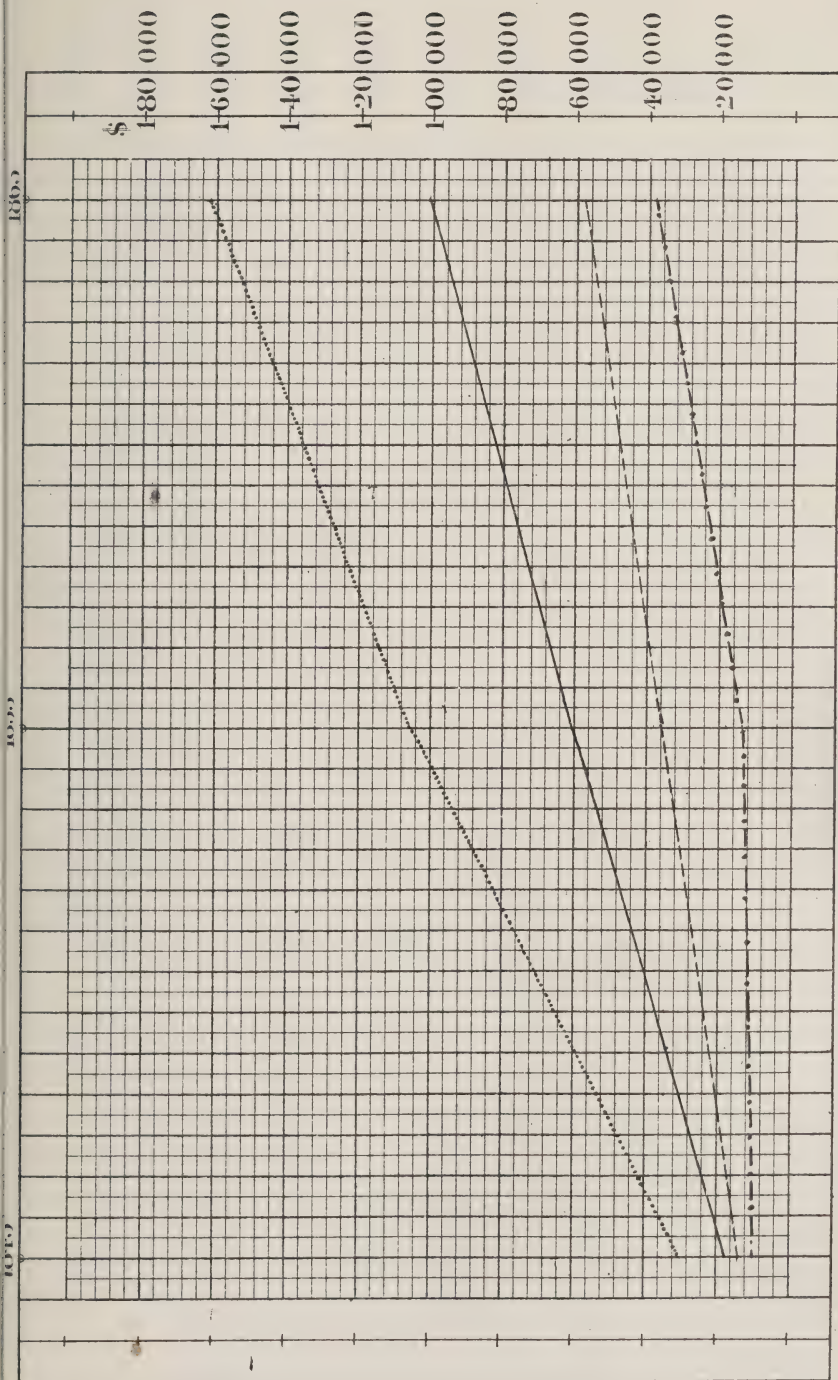


Ratio per square mile of number of manufacturing Establishments in each area.

(Omitting Framingham & Billerica.)

Mystic..... Charles---- Sudbury— Shawshine----

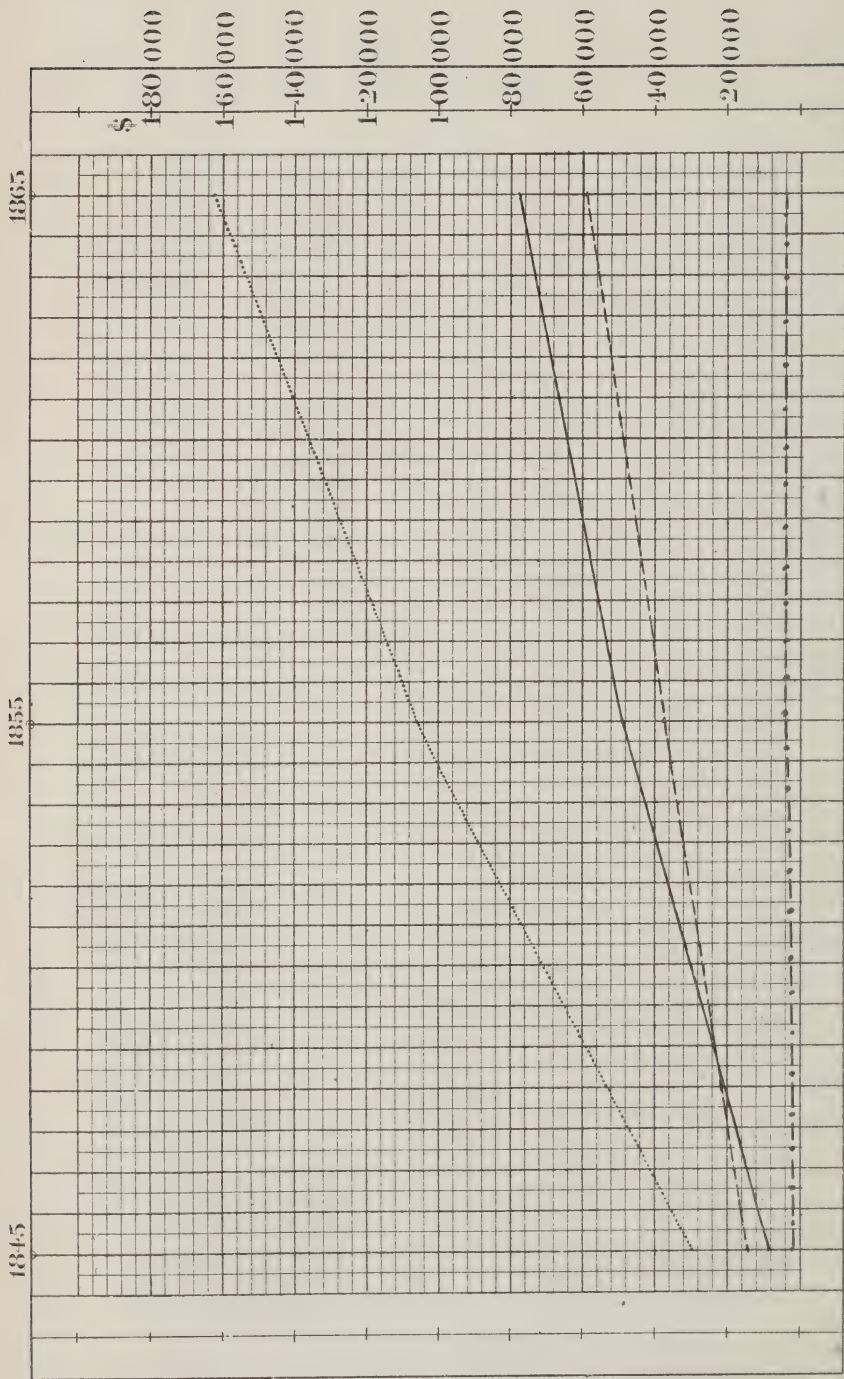
III.



Ratio per square mile of total value of manufactured products of each area.
(Including Framingham & Billerica.)

Mystic..... Charles---- Shawshine----

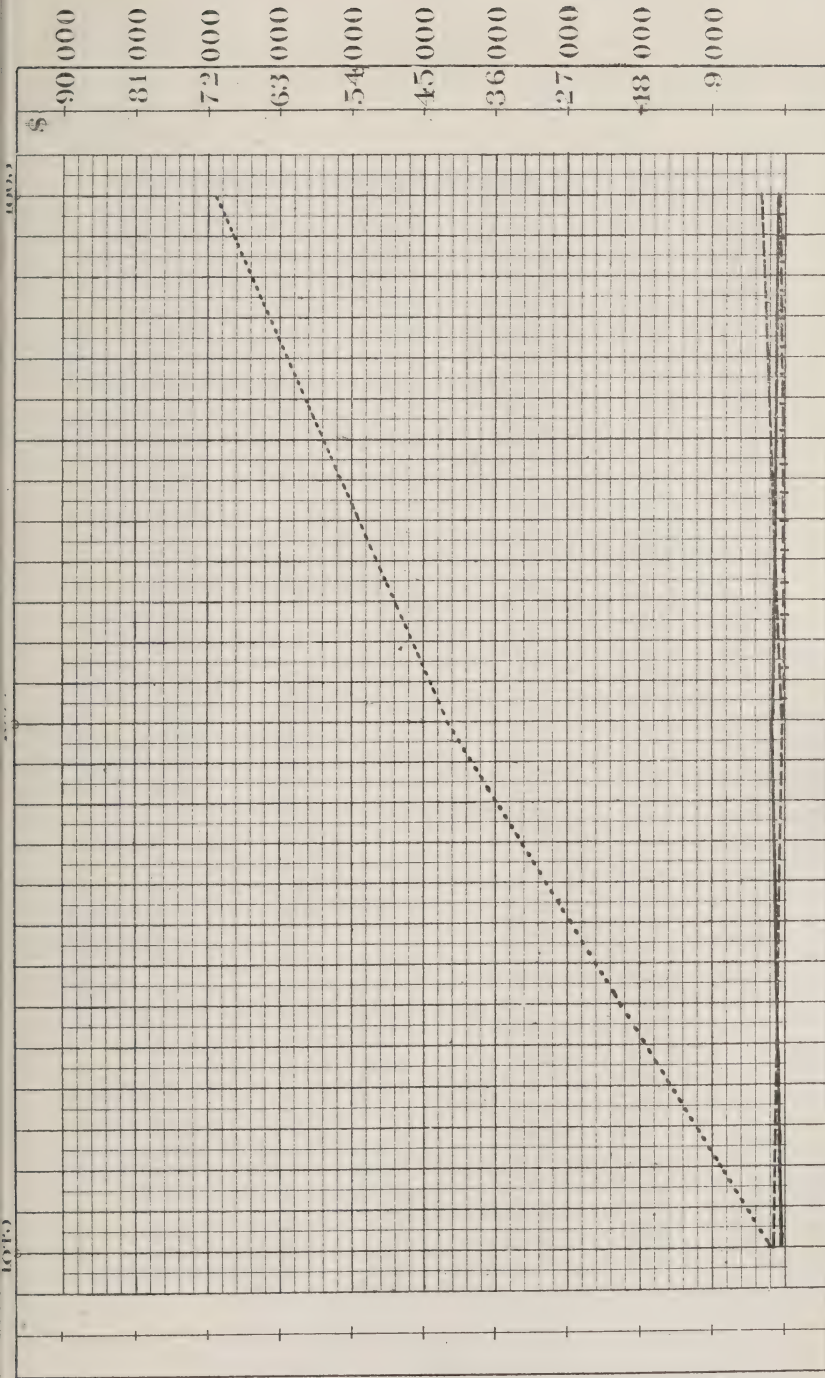
IV.



Ratio per square mile of total value of manufactured products of each area.

(Quitting Framingham & Billerica.)

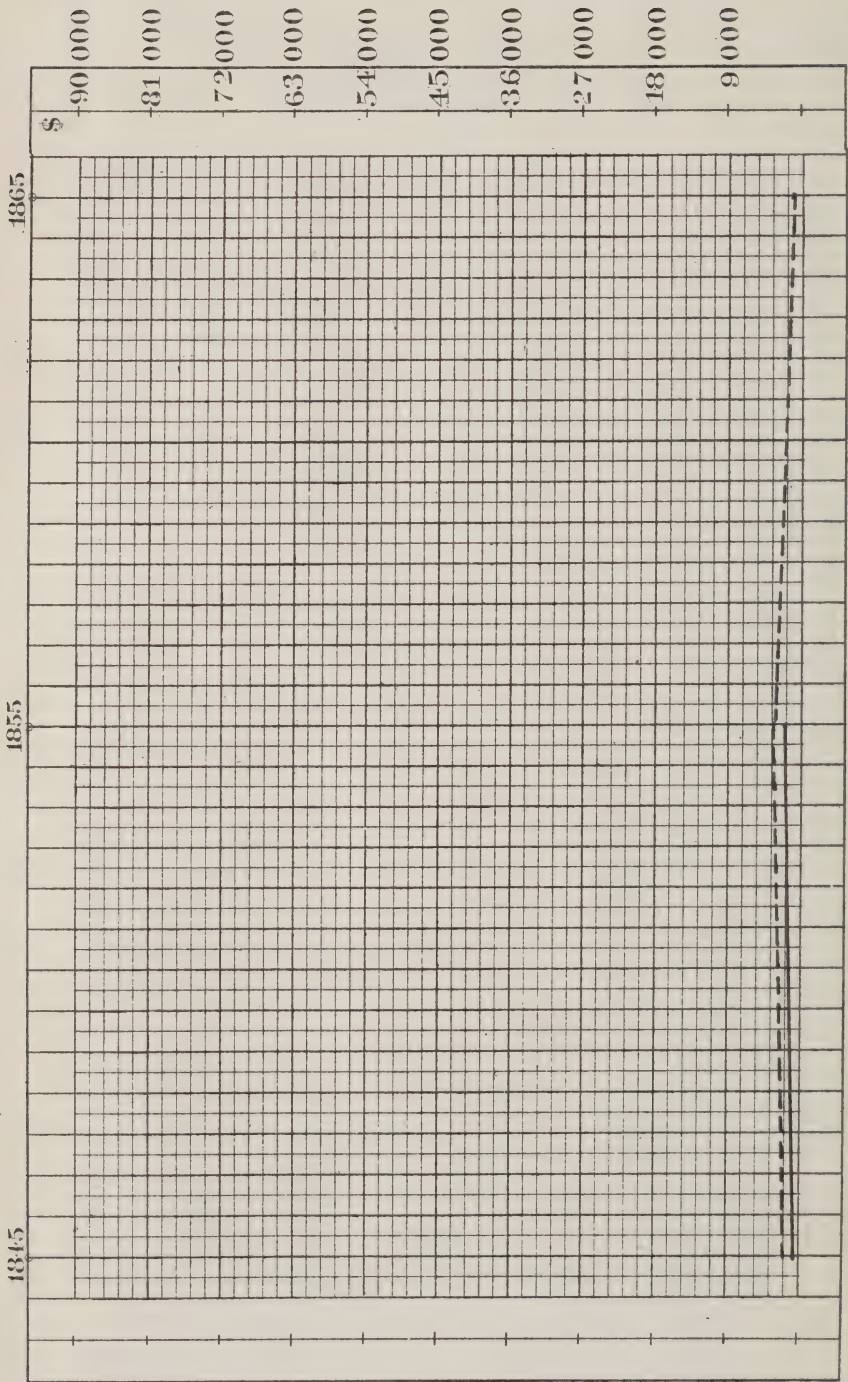
Mystic..... Charles... Sudbury... Shawshime...



Ratio per square mile of value of manufactured products of Class I.

Mystic,..... Charles,----Sudbury---- Shawshine----

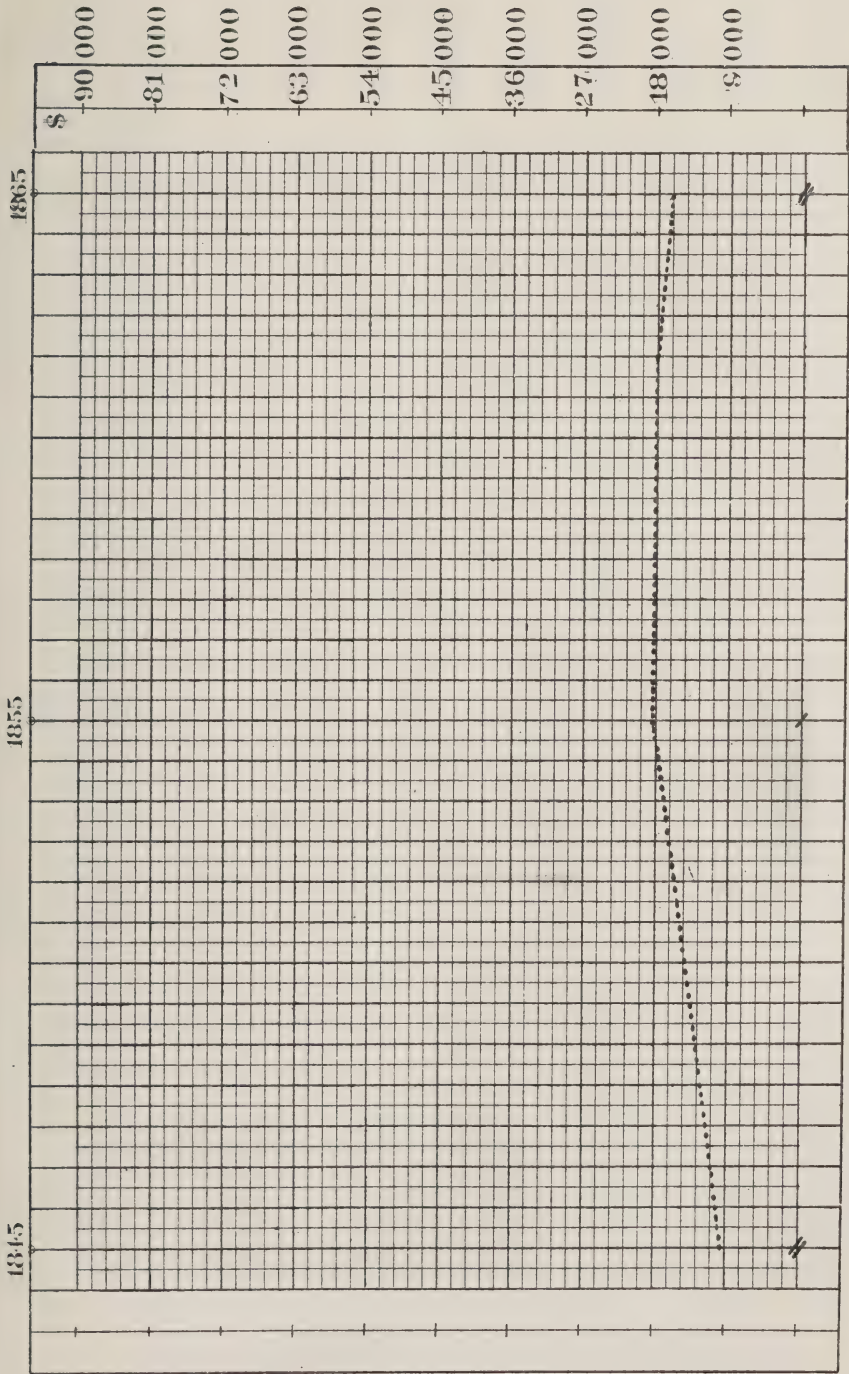
VI.



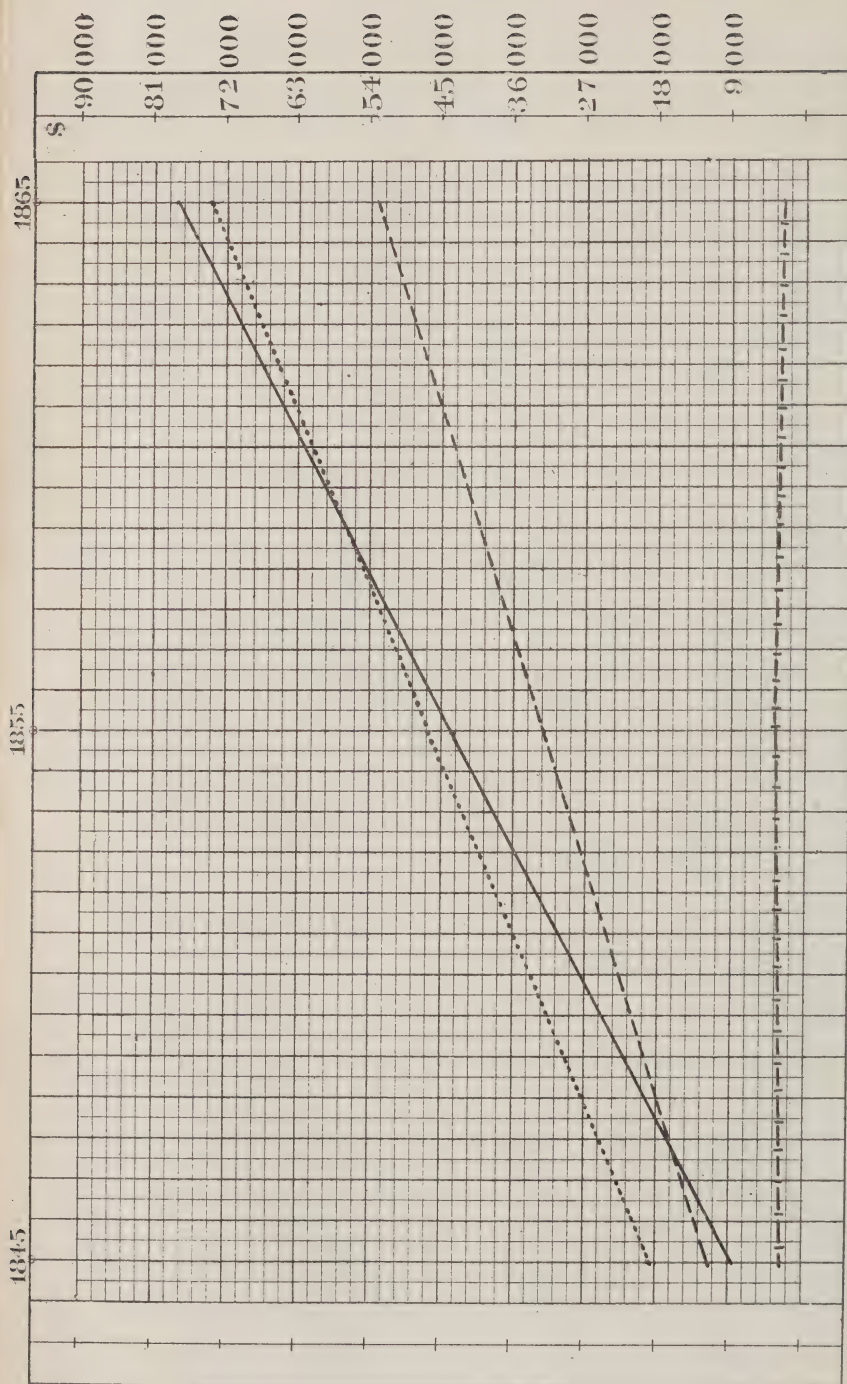
Ratio per square mile of value of manufactured products of Class II.

Charles—Sudbury—

VII.



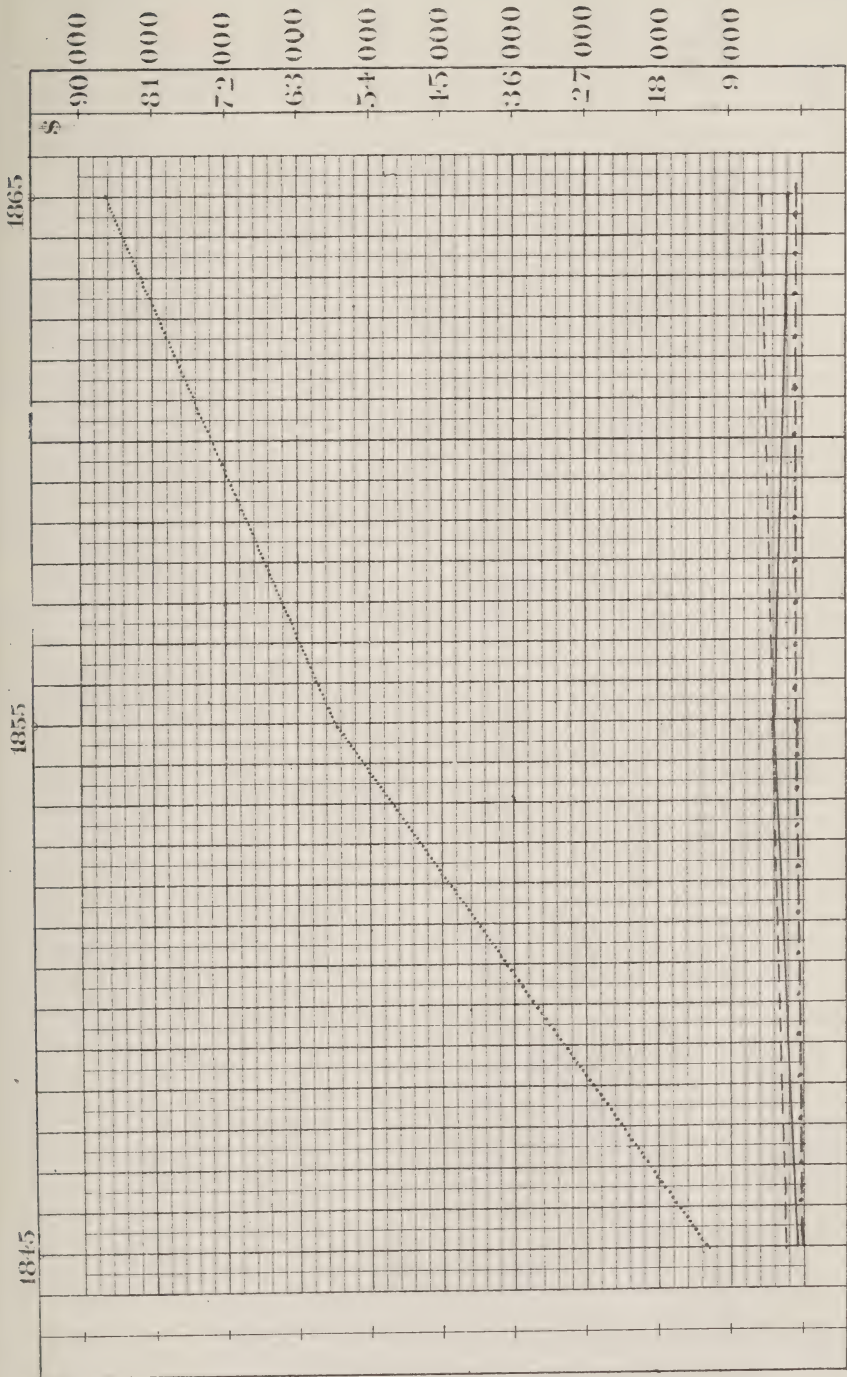
Ratio per square mile of value of manufactured products of Class III.
Mystic..... Charles.... Sudbury— Shawshine— · — · —



Ratio per square mile of value of manufactured products of Class IV.

Mystic..... Charles --- Sudbury — Shawshine - - - -

IX.

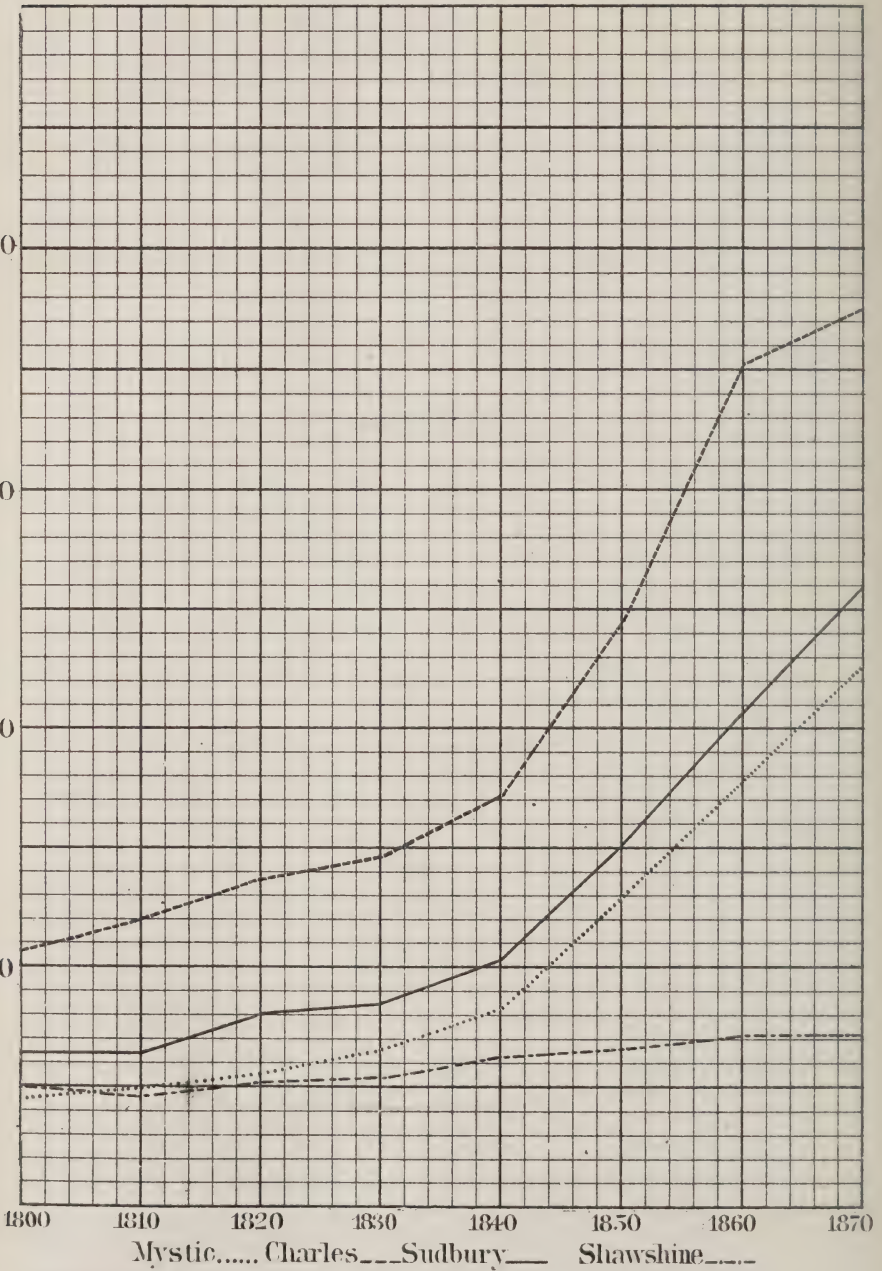


Ratio per square mile of value of manufactured products of Classes I, II, III.

Mystic, ... Charles, --- Sudbury, — Shawshine, -.-

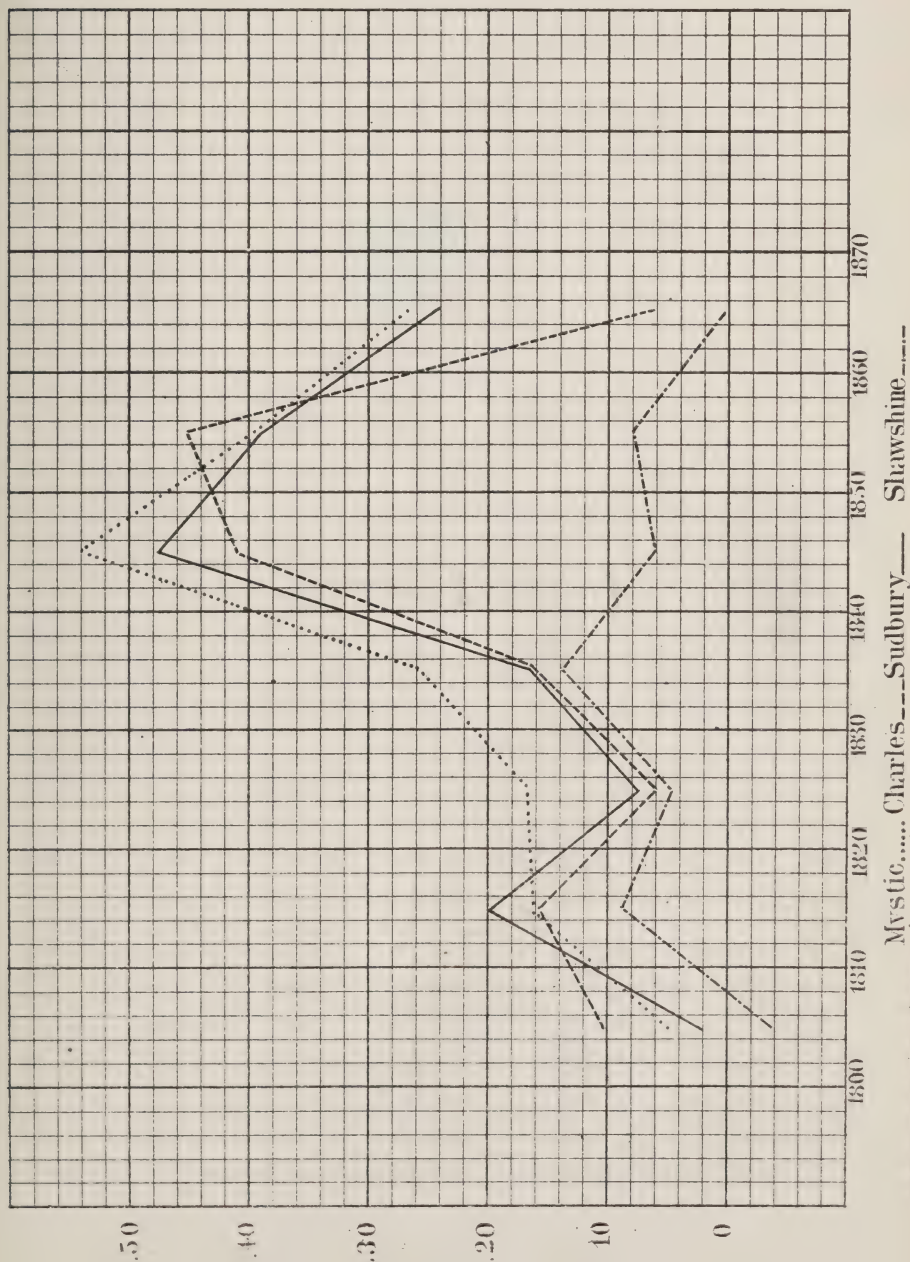
X.

Curves representing the absolute increase of population in towns lying wholly or in part in the four drainage areas



XI.

Curves representing the percentage growth of towns lying wholly or in part in the different drainage areas.



City Document. — No. 103.

CITY OF BOSTON.



MAJORITY AND MINORITY REPORTS
ON THE
CONNECTION
OF
NONESUCH POND
WITH
LAKE COCHITUATE.
1874.

IN COMMON COUNCIL, November 27, 1874.
Read, laid on the table and ordered to be printed.

W. P. GREGG,
Clerk of the Common Council.

CITY OF BOSTON.

IN COMMON COUNCIL, Nov. 12, 1874.

Ordered, That the Joint Standing Committee on Water be requested to consider the expediency of turning the water of Nonesuch pond into the Cochituate conduit, or Lake Cochituate, as a supplementary supply during the time required for the construction of the works for a permanent supply.

Sent up for concurrence.

E. O. SHEPARD,
President.

IN BOARD OF ALDERMEN, Nov. 16, 1874.

Concurred.

JOHN T. CLARK,
Chairman.

Approved. November 16, 1874.

SAMUEL C. COBB,
Mayor.

MAJORITY REPORT.

CITY OF BOSTON.

IN COMMON COUNCIL, Nov. 27, 1874.

The Joint Standing Committee on Water, who were requested to consider the expediency of procuring a temporary supply of water from Nonesuch pond, would respectfully recommend the passage of the accompanying order.

For the committee,

FREDERICK PEASE.

Ordered, That his Honor the Mayor be requested to petition the General Court, at its next session, for the passage of an act authorizing the City of Boston to take water from Nonesuch pond in the towns of Weston and Natick, and to take, from time to time, such lands as may be necessary to preserve the purity of said water, and to conduct it into Lake Cochituate or into the conduit between Lake Cochituate and the Chestnut-Hill reservoir.

MINORITY REPORT.

CITY OF BOSTON.

IN COMMON COUNCIL, Nov. 27, 1874.

The undersigned respectfully dissent from the recommendation of the majority of the committee in the matter of petitioning for authority to take the waters of Nonesuch pond, for the following reasons : —

It appears, from the statement of the engineer, that it will require a full working year, after legislative authority is obtained, to construct a storage reservoir in connection with Nonesuch pond. The cost for land and construction is estimated at \$210,000, in addition to which must be included mill damages and claims for withholding water from Waban lake, a large ornamental pond in front of the estates of Hollis Hunnewell and others, in the town of Needham. The time required for filling the reservoir after its completion, in consequence of the small water-shed, depending upon the annual rainfall, will be from one to six years, and it would only be of value when full, and in a year of drought, like the present. There is a similar reservoir in connection with Lake Cochituate, namely, Dudley pond. This was drawn off during the drought of 1872, and with a more favorable water-shed, it has not since that time, if we are correctly informed, been filled. To construct and fill the proposed reservoir will require more time than to complete works which will furnish the city with an abundant supply of water for the next fifty years. It therefore seems, to the undersigned, undesirable to make the large expendi-

ture required for the proposed reservoir, or any similar small scheme, unless the City Council decide to abandon the surer, better and more ample ones now under consideration. It should be borne in mind that, in addition to the large outlay which must be made during the next year for the Cochituate Water Works, nearly one million dollars will have to be provided, during the same time, to meet the cost of the proposed sewer and storage reservoirs for the Mystic Water Works. To enable the city to receive the benefit of the contracts now existing between the Mystic Works and the several municipalities depending upon that source for a water-supply, work should be commenced early in the coming year in constructing the sewer and reservoir, so that the water may not only be pure, but ample in quantity.

With a profound regard for the best interests of our city, and with the firm conviction that an abundant supply of pure water will tend to promote the prosperity, health and comfort of its people, we again urge upon the City Council the importance of prompt and liberal action upon the question of an additional water-supply.

Ours is a manufacturing city, and the chief element which enters into the successful operation of manufactories is pure water for steam purposes. New industries, requiring water for steam or motive power, are constantly springing up; but during the past year all such have been discouraged for want of water to supply their needs. The revenue from the Cochituate Water Department more than doubles every ten years, reaching this year upwards of one million of dollars, and should the expenditure for the proposed Sudbury works reach the sum estimated, we are confident the increase in revenue will provide for the interest on the cost, and bring to our city the prosperity which follows the permanent establishment of manufacturing industries in any community.

S. B. STEBBINS,

ALANSON BIGELOW.

City Document. — No. 104.

CITY OF BOSTON.



AUDITOR'S MONTHLY EXHIBIT.

DECEMBER 3, 1874.



CITY OF BOSTON.

GENERAL AND SPECIAL APPROPRIATIONS FOR 1874-75.

MONTHLY EXHIBIT.

OFFICE OF THE AUDITOR OF ACCOUNTS, }
CITY HALL, Dec. 3, 1874. }

TO THE HONORABLE CITY COUNCIL:

GENTLEMEN, — The undersigned, in compliance with the third Section of the Ordinance on Finance, herewith presents an Exhibit of the General and Special Appropriations for the present financial year of 1874-75, as shown in the books in his office, December 1, 1874, including the December draft, being eight months' payments of the financial year, — exhibiting the original appropriations, the amount expended, and the balance of each unexpended at that date.

Respectfully submitted,

ALFRED T. TURNER,

Auditor of Accounts.

GENERAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
Addition to City Hospital . . .	\$190,000 00		\$190,000 00
Advertising	6,000 00	\$2,309 79	3,690 21
Annuities	512 00	245 00	267 00
Armories	30,000 00	16,092 43	13,907 57
Assessors' Department	104,729 00	82,951 35	21,777 65
Bells and Clocks	6,475 00	1,723 27	4,751 73
Bennett Grammar School-house, } Brighton	248,230 50	39,200 75	9,029 75
Board of Health	102,100 00	39,517 30	62,582 70
Boston Harbor	10,000 00	3,385 02	6,614 98
Bridges	52,000 00	27,247 23	24,752 77
Brighton Fire Alarm Extension .	6,460 00	4,633 72	1,826 28
Cedar Grove Cemetery }	4,218 40	14,372 40	(\$1,141.14 prov'd for.)
Add Revenue rec'd, \$9,012.86 }			
Charles River and Warren Bridges	45,102 00	5,858 32	39,243 68
Chestnut Hill Driveway	18,500 00	12,669 95	5,830 05
City Hospital	120,000 00	74,862 34	45,137 66
City Registrar's Department . .	12,400 00	6,443 21	5,956 79
Common, etc.	4116,400 00	84,864 41	31,535 59
Contingent Funds, viz.:			
Joint Com'ttees of the City Council	4,000 00	2,303 60	1,696 40
Mayor	1,500 00	257 00	1,243 00
Board of Aldermen	3,000 00	2,049 80	950 20
Common Council	3,000 00	2,142 67	857 33
County of Suffolk	350,000 00	209,402 35	140,597 65
East Boston Ferries	270,000 00	190,068 38	79,931 62
Elevator, City Hall	12,000 00	11,979 54	20 46
Engineer's Department	30,881 00	16,818 89	14,062 11
Engine House and Land, Dover St.	45,000 00	28,583 55	16,416 45
Engine House and Land, Parker St.	40,000 00	11,157 50	28,842 50
Engine House and Land, Fulton St.	45,000 00		45,000 00
Evergreen Cemetery }	738 00	1,107 05	731 95
Add Revenue received, \$1,101 }			
Fire Department	695,742 00	418,771 87	276,970 63
Fire Alarm Telegraph	43,215 00	18,383 49	24,831 51
Grammar School-house, Dudley } District	49,930 99	49,924 59	6 40
Grammar School-house, Everett } District, Ward 16	20,000 00		20,000 00
Grammar School-house, Ward 15, } Building	46,265 20	46,039 11	226 09
Additional Land	5,000 00	5,000 00	
<i>Carried forward</i>	\$2,538,399 09	\$1,430,365 38	\$1,119,288 71

¹ Transferred from the Reserved Fund, \$5,000 00² Brought from last year, 2,530 50

Transferred from the Reserved Fund, 27,700 00

³ Balance of revenue from last year, 1,218 40⁴ Transferred from the Reserved Fund, 700 00⁵ Transferred from Incidental Expenses, \$1,500 00⁶ Balance of revenue from last year, 138 00⁷ Brought from last year, 19,930 99⁸ Brought from last year, 21,865 20

Transferred from the Reserved Fund, 4,400 00

AUDITOR'S MONTHLY EXHIBIT.

5

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. Unexpended.
<i>Brought forward</i>	\$2,538,399 09	\$1,430,365 38	\$1,119,288 71
Grammar School-house, Washing- ton Village :			
Building	120,000 00		120,000 00
Land	35,000 00		35,000 00
Grammar School-house, Winthrop District, Charlestown :			
Building	75,000 00		75,000 00
Land	50,000 00	44,158 00	5,842 00
Health Department	446,607 00	272,591 64	174,015 36
Highland street Stable	120,673 82	19,768 69	905 13
Holton Library Building, Brighton	18,096 50	14,815 47	3,281 03
Incidental Expenses	385,500 00	46,969 31	39,077 49
Add Income Trust Funds, \$546.80 }	22,000 00	14,501 24	7,498 76
Inspection of Buildings	2,055,000 00	1,094,541 68	960,458 32
Interest and Premium	455,500 00	275,245 58	180,254 42
Lamps	11,195 00	6,649 24	4,545 76
Mount Hope Cemetery	426,311 74	30,560 90	8,729 21
Add Revenue rec'd, \$12,978.37 }		138,135 16	((\$35,420.49 prov'd for)
Mystic Water Works	3,000 00	2,585 06	414 94
Add Revenue rec'd, \$102,714.67 }	191,825 00	47,547 20	54,277 80
New Engine House, Brighton	1,500 00	308 10	1,191 90
Overseers of the Poor	1,300,000 00	1,045,116 87	254,883 13
Old Claims	865,000 00	551,366 92	313,633 08
Paving, etc.	43,983 63	28,419 56	15,564 07
Police	14,310 50	14,278 67	31 83
Police Station-house, Ward 16	15,000 00		15,000 00
Police Station-house, West Roxbury			
Primary School-house, City Point			
Primary School-house, Cottage Place, Roxbury :			
Building	50,000 00		50,000 00
Land	28,500 00	28,249 16	250 84
Primary School-houses, East Boston	18,539 56	18,535 68	3 88
Primary School-house, Gibson Dist. :			
Building	15,000 00	456 60	14,543 40
Land	6,000 00	6,000 00	
Primary School-house, Lawrence Dis- trict :			
Building	50,000 00	67 75	49,932 25
Land	25,000 00	21,855 75	3,144 25
Primary School-house, Quincy St.	50,000 00	17,570 26	32,429 74
Printing and Stationery	38,000 00	21,407 52	16,592 48
Public Baths	40,000 00	25,611 45	14,388 55
<i>Carried forward</i>	\$8,624,941 84	\$5,217,678 84	\$3,570,178 33

¹ Brought from last year, \$15,673 82
² Brought from last year, 3,006 50
³ Transferred to Contingent Funds, Board
of Aldermen, 1,500 00
⁴ Bal. of revenue brought from last year, 2,811 74
Transferred from the Reserved Fund, 6,000 00

⁵ Brought from last year, \$38,983 63
⁶ Brought from last year, 9,310 50
⁷ Transferred from the Reserved Fund, 2,500 00
⁸ Brought from last year, 1,339 56
Transferred from the Reserved Fund, 5,200 00

OBJECT OF APPROPRIATIONS.	Amount of each Appropriation.	Expended.	Bal. unexpended.
<i>Brought forward</i>	\$8,624,941 84	\$5,217,678 84	\$3,570,178 33
Public Buildings	¹ 109,500 00	100,625 67	8,874 33
Public Institutions, viz.:			
House of Industry	210,000 00	141,318 45	68,681 55
House of Correction	110,000 00	71,583 96	38,416 04
Lunatic Hospital	65,000 00	40,611 73	24,388 27
Pauper Expenses	60,000 00	26,550 60	33,449 40
Steamboat "Henry Morrison" .	20,000 00	13,140 22	6,859 78
Office Expenses	9,000 00	5,075 72	3,924 28
New Laundry Building, Deer Island	15,000 00	13,660 72	1,339 28
Public Lands	6,000 00	4,216 17	1,783 83
Public Library	135,000 00	80,665 87	54,334 13
Public Library Building Improvem't	30,000 00	18,811 64	11,188 36
Quarantine Department	20,000 00	9,825 03	10,174 97
Registration of Voters and Election } Expenses }	20,000 00	9,620 12	10,379 88
Reserved Fund	² 242,100 00	20,000 00	222,100 00
Roxbury High School-house	30,000 00	27,110 80	2,889 20
Salaries	³ 104,900 00	67,062 89	37,837 11
Schools and School-houses, viz.:			
School Instructors	1,256,600 00	794,872 73	461,727 27
School expenses, School Committee	119,400 00	102,632 25	16,767 75
Salaries officers, School Committee	35,400 00	22,135 00	13,265 00
School-houses, Public Buildings	332,000 00	277,464 42	54,535 58
Sealers of Weights and Measures .	7,400 00	4,175 70	3,224 30
Sewers	300,000 00	194,563 71	105,436 29
Sheds, Health Department	10,000 00	2,548 56	7,451 44
Sinking Fund Commissioners	2,800 00	1,350 00	1,450 00
Surveyor's Department	59,000 00	36,992 62	22,007 38
Water Works	⁴ 757,500 00	526,867 95	230,632 05
Water Works, Interest and Premium	711,000 00	175,385 00	535,615 00
West Boston and Cragie's Bridges	⁵ 109,809 04	75,871 18	33,937 86
Widening Streets	300,000 00	132,522 90	167,477 10
Total Appropriations, \$13,645,143 00		\$8,214,940 45	\$5,760,325 76
Less transferred to Water Works, W'ds 13 to 16, and extension to Wards 17 and 19, ... 30,000 00		Less provided for	36,561 63
			\$5,723,764 13
\$13,615,143 00			
Balances from 1873-4, 197,207 88			
Add Revenue,	13,812,350 88		
	126,353 70		
	\$13,938,704 58		

¹ Transferred from the Reserved Fund, \$2,500 00.

² \$3,900 00 transf'd from Res'd Fund to Salaries.

5,200 00 " " Primary School-houses, East Boston.

6,000 00 " " Mount Hope Cemetery.

27,700 00 " " Bennett Grammar School-house, Brighton.

4,400 00 " " Grammar School-house, Ward 15.

700 00 " " Common, etc.

2,500 00 " " Primary School-house, Cottage Place, Roxbury.

20,000 00 " " Water Works, Wards 13 to 16, and Extension to Wards 17 and 19.

2,500 00 " " Public Buildings.

5,000 00 " " Armories.

³ Transferred from Reserved Fund, \$3,900.

⁴ Transferred to Water Works, Wards 13 to 16, and Extension to Wards 17 and 19, \$30,000 00.

⁵ Brought from last year, \$80,309 04.

SPECIAL APPROPRIATIONS.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (transfer and loans) . .	\$432,315 59	\$135,174 62	\$297,140 97
Atlantic Avenue (loans)	131,494 13	35,000 00	96,494 13
Beach Street (loans)	251,000 09	.....	251,000 09
Broadway Bridge Foundations (loan)	110,295 00	16,079 55	94,215 45
Broadway Extension (loans)	80,680 21	.....	80,680 21
Burnt District (loans)	1,641,647 83	704,511 67	937,136 21
Canton Street Grading (loan)	1,225 20	159 00	1,066 20
Columbus Avenue Extension (loan)	21,931 80	175 74	21,756 06
Devonshire Street Extension (loans)	92,163 57	74,644 21	17,519 36
Eastern Avenue and Bridge (loan)	193,122 00	46,803 03	146,318 97
Engine and Hook and Ladder House, Ward 5 (loans)	17,951 34	17,949 94	1 40
Engine House, Mason Street (transfer)	5,537 55	2,836 28	2,701 27
Fort Hill Improvement (loans)	80,477 35	66,362 90	14,114 45
Harrison Avenue Extension (loan)	45,960 47	.....	45,960 47
Home for Poor, Deer Island (transfer)	150,000 00	.....	150,000 00
Hook and Ladder House No. 4, (reserved fund) . .	5,557 31	5,538 61	18 70
Hose House, Longwood (loan)	15,421 75	15,406 19	15 56
Memorial Monument, Boston Common (transfer) . .	75,000 09	22,500 00	52,500 00
New Lunatic Hospital (loan and appropriation) . .	103,044 04	693 83	102,350 21
Northampton Street District (loan and transfer) . .	202,573 67	109,437 76	93,135 91
Oliver Street (revenue)	1,748 74	5,748 75	\$4,000.01 adv'd by Treasurer.
Parker Hill Reservoir (loan)	123,309 22	83,860 11	44,449 11
Police Station House, South Boston (loan)	9,128 22	7,126 99	2,001 23
Primary School House, Newbury Street (loan) . . .	40,000 00	500 00	39,500 00
Rebuilding Hose House No. 5, (transfer)	10,000 00	.....	10,000 00
Small-pox Hospital (loan)	35,987 96	6,744 32	29,243 64
Soldiers' Relief	149,280 36	51,569 86	97,710 50
Suffolk Street District (loans and transfer)	16,819 11	990 45	15,828 66
Ticknor Bequest (transfer)	2,060 51	.....	2,060 51
Washington Street Extension (loan)	179,103 77	52,856 87	126,246 90
Water Street Grade Damages (transfer)	15,546 17	.....	15,546 17
Water Works, Wards 13 to 16, and Extension to Wards 17 and 19 (loan and transfer)	110,000 00	60,723 89	49,276 11
Widening and Grading Dudley and other Streets (loan)	7,035 56	225 00	6,810 56
Widening Eliot Street (loan and transfer)	13,458 99	.....	13,458 99
Widening Federal Street (loans)	1,103 03	.....	1,103 03
Widening Hanover Street, No. 2 (loans)	34,570 39	11,705 50	22,864 89
Widening Warren Street (loan)	39,306 60	20,261 57	19,045 03
Widening Washington and Essex Streets (loan) . . .	77,472 99	5,901 31	71,571 68
Advanced by Treasurer	\$4,528,330 53 4,000 01	\$1,561,487 95	\$2,970,842 59
	\$4,532,330 54		

RECAPITULATION.

	Appropriations, Revenues, etc.	Expended.	Unexpended.
General	\$13,938,704 53	\$8,214,940 45	\$5,723,764 13
Special	4,532,330 54	1,561,487 95	2,970,842 59
	\$18,471,035 12	\$9,776,428 40	\$8,694,606 72

UNCOMPLETED PUBLIC BUILDINGS AND PUBLIC WORKS, MAY 1, 1874.

TOTAL APPROPRIATIONS AND EXPENDITURES FOR EACH.

The following table shows the total amount of appropriations made from time to time by the City Council, and the objects for which they were made, — the amount expended, and balance unexpended, including the December draft.

OBJECT OF APPROPRIATIONS.	Loan, Revenue, or from Transfers.	Expended.	Unexpended.
Additional Supply of Water (loans)	\$610,000 00	\$312,859 03	\$297,140 97
Atlantic Avenue (loans)	1,600,000 00	1,503,505 82	96,494 18
Bennett Grammar School-house, Brighton (appro'n)	56,200 00	47,170 25	9,029 75
Broadway Extension (loans)	1,000,000 00	919,319 79	80,680 21
Burnt District (loans)	6,671,176 65	5,734,040 44	937,136 21
Canton Street Grading (loan)	118,000 00	116,933 80	1,066 20
Columbus Avenue Extension (loans)	515,000 00	493,243 94	21,756 06
Devonshire Street Extension (loans)	610,000 00	592,480 64	17,519 36
Eastern Avenue and Bridge (loan)	200,000 00	53,681 03	146,318 97
Engine and Hook & Ladder House, Ward 5 (loans)	65,000 00	64,998 60	1 40
Engine House, Mason Street (transfer)	15,000 00	12,298 73	2,701 27
Fort Hill Improvement (loans)	1,575,000 00	1,560,885 55	14,114 45
Grammar School-house, Dudley District (loan and appropriation)	140,000 00	139,993 60	6 40
Grammar School-house, Ward 15 (loan and appro'n)	134,400 00	134,173 91	226 09
Highland Street Stable (loan and appropriation)	90,000 00	89,094 87	905 13
Holton Library Building, Brighton (appropriation)	29,500 00	26,218 97	3,281 03
Harrison Avenue Extension (loan)	220,000 00	174,039 53	45,960 47
Hook & Ladder House, No. 4 (transfers)	33,000 00	32,981 30	18 70
Hose House, Longwood (loan)	28,000 00	27,984 44	15 56
New Lunatic Hospital (loan and appropriation)	148,000 00	45,649 79	102,350 21
Northampton Street District (loan and transfer)	205,000 00	111,864 09	93,135 91
Oliver Street (loan and revenue)	188,862 79	358,643 92	169,781.13 ad. by Treas.
Police Station House, Ward 16 (loan and appro'ia'n)	45,000 00	29,435 93	15,564 07
Police Station House, West Roxbury (appropriation)	22,426 00	22,394 17	31 83
Primary School-houses, East Boston (loan and appro.)	97,200 00	97,196 12	3 88
Parker Hill Reservoir (loan)	161,000 00	116,550 89	44,449 11
Police Station House, South Boston (loan)	45,000 00	42,998 77	2,001 23
Suffolk Street District (loan and transfer)	2,391,248 96	2,375,429 30	15,828 66
Washington Street Extension (loan)	1,760,000 00	1,633,753 10	126,246 90
Water Street Grade Damages (transfer)	100,000 00	84,453 83	15,546 17
Widening and Grading Dudley & other Streets (loans)	180,000 00	173,189 44	6,810 56
Widening Eliot Street (loan and transfer)	390,000 00	376,541 01	13,458 99
Widening Federal Street (loans)	325,000 00	323,896 97	1,103 03
Widening Hanover Street, No. 2 (loan)	803,623 58	780,758 69	22,864 89
Widening Warren Street (loan)	115,000 00	95,954 97	19,045 03
Widening Washington and Essex Streets (loan)	250,000 00	178,428 32	71,571 68
Amount advanced by Treasurer	\$20,937,637 98 169,781 13	\$18,883,034 55	\$2,224,384 56
	\$21,107,419 11		

City Document.— No. 105.

CITY OF BOSTON.



REPORT
ON THE
ESTABLISHMENT
OF A
PUBLIC PARK.

CITY OF BOSTON,
IN COM. COUNCIL, Dec. 3, 1874. }

Read, laid on the table with the accompanying Report,
and ordered that the same be printed; and that a thousand
extra copies be printed.

Attest:

W. P. GREGG,
Clerk of the Com. Council.

CITY OF BOSTON.

EXECUTIVE DEPARTMENT, CITY HALL, }
BOSTON, December 3, 1874. }

COL. E. O. SHEPARD, *President of the Common Council*:—

SIR, —I have the honor to transmit, herewith, the report of the Commissioners appointed under the order approved Feb. 17, 1874, to investigate the subject of the establishment of public parks. SAM'L C. COBB, *Mayor*.

To the Honorable the City Council of the City of Boston:—

The Commission, appointed to consider the subject of Public Parks, respectfully submits the following

REPORT.

The City of Boston, the sixth in population and the second in valuation in the United States, has one hundred and fifteen acres of public grounds within its limits.

New York has	.	.	.	.	.	1,358 acres.
Brooklyn “	.	.	.	.	.	550 “
Philadelphia “	.	.	.	.	.	3,074 “
Baltimore “	.	.	.	.	.	771 “
Chicago “	.	.	.	.	.	1,897 “

devoted to public uses.

While these cities have begun, and, in some cases, have completed their great public parks, Boston, relying on her situation, and content with suburbs unrivalled for beauty

and for ease of access, has lost the opportunity of acquiring land at nominal prices, and to-day finds that the rural beauty so highly prized has nearly disappeared, and that no provision has been made to supply its place.

It is useless to dwell on past shortcomings; but we earnestly recommend that no further time be lost in maturing and carrying out a plan adequate to the future needs of the city in this direction. We think that money so expended will be well invested, and quickly returned, by betterments, and by the increase in taxable value of all surrounding property. In this connection it will not be out of place to see what has been done elsewhere, and what have been the results.

NEW YORK.

In 1857 the Central Park was commenced, and may now be said to be finished. It contains 937.68 acres, and has been the most costly of any yet undertaken in this country. The outlay has been

For land	\$5,028,844 10
“ improvements	8,873,671 50
	\$13,902,515 60

When it was begun, the real estate valuation of the city was	\$352,343,033
In 1874 (the island alone).	858,641,630
An increase in 17 years of	\$506,298,597

Equal to 143 per cent.

The increase for the same time, with the exception of the three wards lying around the Park, has been \$297,399,173, equal to 91 per cent., while for the three adjacent wards it has been \$208,899,424, equal to 768 per cent., and more than two-fifths of the increase of the whole city.

BROOKLYN.

Work was actually commenced on Prospect Park in 1866.

The real-estate valuation of the city at that time, not including the wards adjacent to the Park, was \$93,000,000; it is now \$151,000,000, an increase of 62 per cent.; the valuation of the adjoining wards was \$30,000,000, and is now \$65,000,000, an increase of 117 per cent.

The cost to date has been about \$9,000,000 for land and construction.

PHILADELPHIA.

The Park commission was appointed in 1867.

The outlay has been for land	.	.	\$5,737,000
For improvements	.	.	1,500,000
			\$7,237,000

The real-estate valuation of the city in 1868 was \$445,563,321

In 1874 539,003,602

An increase of \$93,440,281

Equal to 21 per cent.; while the increase in the neighborhood of the Park has been over 400 per cent.

BALTIMORE.

In 1860 Druid Hill, containing 685 acres, was inaugurated. The increase in the valuation of the whole city, from 1860 to 1874, has been 69 per cent.; the increase of the lands adjoining the Park has been over 400 per cent. The cost to this time has been

For land	.	.	.	.	.	\$575,000
“ improvements, about	.	.	.	.	.	1,200,000
						\$1,775,000

CHICAGO.

The Parks here, comprising nearly two thousand acres, were commenced in 1868. The increase in the valuation of the city since that time has been 34 per cent.; in the lands in the vicinity of the Parks the increase has averaged 400 per cent.

The cost to date has been

For land	\$3,603,475
“ improvements	2,629,278
	<u>\$6,232,753</u>

And this, notwithstanding that, in 1871, 70,000 people were burned out.

It thus appears that while the increase of the cities has ranged from 21 to 143 per cent., the increase of the lands adjoining their Parks has ranged from 117 to 768 per cent.

While it would not be just to say that this remarkable growth in the vicinity of these Parks has been entirely owing to their establishment, enough remains, after all reasonable deductions shall have been made, to show that they have been sources of large pecuniary profit to the communities in which they are situated.

The following table gives the real-estate valuation of the different cities when their Parks were commenced:—

New York	\$352,343,033
Brooklyn	123,000,000
Philadelphia	445,563,321
Baltimore	131,540,072
Chicago	174,505,410

Boston, with a real-estate valuation of \$554,200,150, has yet to take the first step in this direction.

Let us now consider the sanitary aspect of the question.

Nothing is so costly as sickness and disease; nothing so cheap as health. Whatever promotes the former is the worst sort of extravagance; whatever fosters the latter is the truest economy. It is unnecessary to argue the truth of these propositions; they are self-evident. We apply them to ourselves and to our families, but are apt to forget that they are equally applicable to the community as a whole.

Whatever increases disease is a heavier tax than any other on the resources of a city; whatever prevents it, and brings in health, yields a larger return than any other investment.

"Within the past twenty-five years," says President White, of Cornell University, "there has been created a science of sanitary engineering. I say, within the past twenty-five years, although I know that engineering, even in ancient times, had frequent reference to sanitary considerations. Any one who has walked along the Tiber, at Rome, as far as the mouth of the Cloaca Maxima, is well aware of that; but it is within the past twenty-five years that the science has been placed on solid foundations.

"Vital statistics have shown the effects of the introduction of sunlight, of pure water and air, into our dwellings and cities, and engineering has shown us the best methods of introducing them. Any one who will take up the recent work on the subject by Mr. Baldwin Latham, will see what great conquest has here been made.

"The statistics show that of seven leading towns and districts in England, such as Croydon, Ely, Salisbury, and others, where careful and thorough modes of sewerage prevail, the percentage of deaths has been reduced from forty to twenty per cent.

"I also see, from calculations made on the basis of Dr. Allen's tables, that there is a saving to these districts pecuniarily. Taking into view the fact that for every death

prevented about twenty cases of disease are prevented, I will say, that, judged even from a cold financial point of view, the result has been magnificent. What the result would be by good modes of sanitary engineering may be judged from the statement in Dr. Beale's book on 'Disease Germs,' which is, that by a good system of sewerage one hundred thousand lives might be saved annually in England."

Those who constitute the mass of our community, at least three-fourths of it, the laboring men and women of Boston with their families, should not be surrounded by what Kingsley calls, "every circumstance which depresses the vital energies, and leaves them an easy prey to pestilence itself, by bad light, bad air, bad food, bad water, bad smells, bad occupations, which weaken the muscles, cramp the chest, disorder digestion."

This is exactly what we are doing, or permitting to be done here in Boston, as the city grows. Unless open spaces of sufficient extent are provided and properly located, we shall create and shut up in this city the conditions, of which disease, pestilence and death will be the natural offspring.

This will become more apparent if we consider the direction, extent, and character of the city's growth. The topography of the immediate neighborhood of Boston is such, that its largest growth will necessarily be in a westerly and southerly direction. In the territory bounded by a line drawn from the northerly end of Arlington street on Charles river, to Dover-street bridge on the South Bay; thence by a line, southwesterly, through Albany street to Dudley street, in what was formerly Roxbury; thence by a line running northerly through Longwood avenue to the Cottage-Farm Station, on the Boston & Albany Railroad; and thence by the south bank of Charles river to the point of beginning, there are, according to the estimate of Mr. Davis, the City Surveyor, about 1,700 acres of land and

water. Much of this tract is inhabited, or used for manufacturing purposes; if the unfilled portions were filled up in the same way as much of the neighborhood has been, and the whole territory occupied, we should have the following results:—

Wards 2, 3, 4, 5, 6, 8, 9, 10 and 11, with an area of 1,380 acres, contained, according to the census of 1870, a population of 93.63 persons to the acre. When the territory above described is fully inhabited, it will have, at least, as many persons to the acre as the wards just mentioned; a population of 159,171.

The population in the territory within the six-mile circle from the State House has doubled every 18 years since 1820; at this rate these 1,700 acres will be entirely occupied in less than 20 years. More than 150,000 people will then be living between Arlington street and Parker's Hill. This district is a natural cesspool; from its centre the land rises to the Highlands of Roxbury, to Parker's Hill, and even towards Washington and Arlington streets. If it be filled to the grades of 12 feet above mean low water for the cellars, and 18 feet for the streets, which are the ones established for what has been hitherto filled, there will be a large and densely populated district, into and over which will flow the surface drainage and much of the filth from an extensive tract of a higher level nearly all around it. It is easy to predict that the death-rate, not only of that district, but of the whole city, will be alarmingly increased unless stringent measures are adopted to prevent such misimprovement.

The Registrar of Boston, in his annual report for 1873, comments on the vital statistics which he presents as follows:—

"From an examination of the foregoing tables it is evident that Boston cannot be congratulated on its sanitary condition. Without the prevalence of any epidemic, except

scarlatina and small-pox, the former existing to no greater extent than for a number of years past, and the latter disappearing in July last, the death-rate appears in the ratio of 28.45 in a thousand. In three years only (1853, 1854 and 1872) within the last 25 has the rate reached the present one. In 1851 and 1864 it was 27 in a thousand, and in 1859 it had fallen to 21.4. For the 10 years ending with the last-named year, the average rate was 25.2; and, in the 10 years ending with 1869, it was 23.7. In 1870 it was 24.3; in 1871 it was 23.5, and in 1872 it jumped to 30.5. The prevalence of small-pox in the past year, the only unusual disease noticeable during that period, will account for a portion of the large mortality; but it will be seen that with the subsidence of that disease, the death-rate still remained at an unpleasant altitude. To those who are familiar with vital statistics and are able to read their meaning, the sudden increase of the death-rate from 23.5 in a thousand in 1871, which was preceded by a similar condition for a series of years, to 30.5 in 1872, and this in turn followed by the rate of 28.4 in 1873, the subject assumes a very serious aspect."

This serious aspect of the death-rate in Boston, to which the Registrar has so earnestly called the attention of its citizens, will become still more serious in the future, and in a future that is close at hand, if the territory which we have described is not laid out with wise forethought. There is no part of the city as constituted to-day that requires more careful sanitary engineering than this. It should not be forgotten, moreover, that an infected and unhealthy district poisons the air for miles around it.

If scarlet fever, typhus and typhoid fevers, cholera infantum, cholera, and other similar scourges, that punish so fearfully man's ignorance and negligence, are generated in the cesspool we have described, the dwellers on Beacon

street, at the South End, on the Highlands of Roxbury, and at Longwood, will not escape similar punishment.

Boston has paid more attention to intellectual and less to physical education, on which to be of use all the former must be based, than any city in the country. She seems to have forgotten that a community to be truly strong must be strong in every way; that the strength of the whole is measured by that of the weakest part. It is not enough in these days to be nearer by 200 miles to Liverpool, if we have no trunk line to the West; it is not enough to widen and straighten our streets, unless we can compel the business to fill them. Nor is it enough to have the best common schools on the continent, and to add to them Conservatories of Music, Schools of Design, and Art Museums, unless at the same time provision be made for that physical culture, which fresh air, and the opportunities for out-door life, alone can give.

The fact that every day's delay will add so greatly to the cost should compel immediate action. A city, to keep its rank, cannot afford to postpone inevitable improvements. All experience shows that the tendency of the population is toward the cities; year by year, in the older parts of the country, the villages and smaller towns, unless supported by manufacturing, are dwindling; the cities grow out of all proportion to the rest. Centralization is the type of the age. Recognizing this fact, what shall we do? The answer is plain. Make the cities in all ways healthful and beautiful. Bring in pure water. Provide at any cost such a system of sewerage that not a single death can be laid at that door. And, cheapest of all, see to it in time that pure air shall be within the reach of all within your limits.

We can forecast the future; we can tell to a thousand how many people Boston will contain ten, twenty, thirty years hence; how many square miles will be covered with dwellings; what will be the taxable valuation. Can we not

foresee, too, what that population will need in the way of breathing spaces, and at what cost that population will have to provide them, if we neglect our plain duty? Whatever plan may be adopted, if as comprehensive as the most sanguine might propose, will probably be pointed at within the next thirty years as another instance of how little one generation realizes the growth and needs of the next.

We need in Boston no single large "Central Park;" the shape of the city forbids it, nor would it answer our purposes. We need many open spaces in every part; a series of Parks, of various sizes and shapes, where the land may be found best fitted for them, connected by broad driveways. This system of roads should also connect with Forest Hills, Mount Hope, and Mount Auburn Cemeteries; and, if an arrangement can be made with Harvard University, with the Arnold Arboretum, which is to be located on a part of the Bussey Farm in West Roxbury, we think that the University will agree to keep this forever open to the public, under proper regulations to be agreed upon, if the city, paying nothing for the land, will contribute to the cost of laying out and planting it in the first instance, and of keeping it in order thereafter.

One of the strongest objections has been that Boston at this time should not increase its debt for any purpose not absolutely necessary. We think that the necessity exists from a sanitary point of view, and that the experience of other cities proves that the question of cost need not stand in the way of immediate action.

We therefore recommend: —

First, that, in view of the present grade, and of the class of buildings which may be erected there, a Park be laid out in some part of the territory between Arlington street and Parker's Hill.

Second, that a series of Parks of moderate size, connected by proper roads, be laid out between the third and fourth

mile circles ; and that the land for a second series of larger size, beyond the first, be secured at once ; these outer Parks need not be improved until the growth of the city makes it necessary.

Third, that application be made to the next Legislature for the power to take land for Public Parks, and their connecting roads, and that assessments for betterments in this connection may be authorized.

Having no power to act, we think it unwise to specify any particular lots of land to be taken for these purposes.

SAM'L C. COBB.

JOHN T. CLARK.

GEO. A. SHAW.

JAMES J. FLYNN.

H. J. BOARDMAN.

RICHARD FROTHINGHAM.

EDW. H. CLARKE.

WM. GRAY, JR.

Boston, November 25, 1874.

The undersigned, while assenting in general terms to the statements contained in the foregoing report, desires to have it appear as a part of the record that he is opposed to any measures which will involve an expenditure of money for the purpose of laying out Public Parks at this time, the city being heavily in debt, the taxes for municipal purposes very high, and all kinds of business in an unusually depressed condition.

JAMES POWER.

City Document.—No. 106.

CITY OF BOSTON.



EQUEST

FROM THE

COMMITTEE ON PUBLIC BUILDINGS

FOR AN

ADDITIONAL APPROPRIATION.

1874.



CITY OF BOSTON.

IN BOARD OF ALDERMEN, Dec. 7, 1874.

The Committee on Public Buildings beg leave to represent that an additional appropriation is required for Public Buildings, to meet expenses on the same for the remainder of the financial year.

The occasion for this deficiency is partly due to the repairs and alterations necessary on Public Buildings in the newly annexed territory, the addition of which has increased the number of Public Buildings to a total of 106, the requirements for all of which it was impossible to obtain definitely at the time the appropriation was made up. In addition are expenditures ordered by the City Council during the year, and not anticipated in the yearly appropriation, such as the leasing of building No. 30 Pemberton square for city offices, altering, fitting and furnishing the same.

The creating of office of Architect, with the necessary assistants and equipment to carry on the same.

The repairing of damage by fire in July last, to Armory, Maverick street, East Boston. The furnishing of increased accommodation for the Health Department, Board of Health, Fire Commissioners and Assessors, with the necessary fitting and furnishing.

The above items enumerated have caused an expenditure from the appropriation of \$30,000.00, not anticipated at the beginning of the financial year.

Following are the amounts classified expended from the appropriation on the various Public Buildings, from May 1 to Dec. 1, 1874.

Appropriation for Public Buildings for the financial year
1874-75 \$107,000 00

Expended —

For Masonry, drains and paving	\$9,147 91	
“ “ contract work	4,000 00	
“ Carpentry, ordinary	7,761 41	
“ Carpentry, contract work	4,500 00	
“ Gas-fitting, Piping and Plumbing	3,832 35	
“ Painting, contract work	5,000 00	
“ Painting and Glazing	3,121 25	
“ Whitewashing and Plastering	2,819 32	
“ Carpeting	5,325 80	
“ New Furniture, repairs of old, Window Shades, Bells and Clocks	8,016 33	
“ Roofing	1,464 28	
“ Iron Work, Fences, etc.	2,314 17	
“ New Heating Apparatus and repairs of old	9,050 77	
“ Locksmithing	105 75	
“ Gas and Water	2,146 23	
“ Rents and Taxes	7,039 21	
“ Care, Cleaning and Janitors	6,345 16	
“ Fuel	3,704 22	
“ Supplies, including Ice, Mats, Hods, Baskets, etc.	1,986 49	
“ Salaries	7,134 32	
“ Miscellaneous expenses	4,515 48	
“ Watering	153 75	
		99,484 20
Unexpended Balance		7,515 80

RECAPITULATION.

Expended	99,484 20
Unexpended	7,515 80
	<u>\$107,000 00</u>

Your committee estimate as the amount necessary for the expenses of the department for the remainder of the year, in addition to the balance remaining, the sum of \$27,000.00. This includes the \$12,000.00 estimated and ordered in the yearly appropriation for the raising and altering of Police Station-house No. 8.

They would, therefore, respectfully request an additional appropriation of twenty-seven thousand dollars.

For the Committee,

HIRAM EMERY,

Chairman.

City Document. — No. 107.

CITY OF BOSTON.



MAJORITY AND MINORITY REPORTS

ON

WIDENING AND EXTENDING

SWETT STREET,

BETWEEN

ALBANY ST. AND DORCHESTER AVE.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, December 14, 1874.

The Joint Standing Committee on Streets, to whom were referred the resolve and order passed by the Board of Street Commissioners for the widening and extension of Swett street from Albany street to Dorchester avenue, having carefully considered the subject, beg leave to submit the following

R E P O R T.

Swett street, as at present laid out, is about forty-five feet in width, and extends from Albany street to Gerard street—a distance of about seven hundred feet. The plan of improvement presented by the Street Commissioners provides for widening the old street to sixty feet, and extending it in a straight line to Dorchester avenue, at the intersection of Dorchester street and Boston street, a distance of about 4,700 feet. The general grade of the new street, as shown on the plan of the City Surveyor, is eighteen feet above mean low water, except where it approaches, and passes under, the Hartford & Erie Railroad. The lowest grade under the railroad bridge is fourteen feet. The act of the Legislature [1874, chapter 387] provides that the street shall not cross the railroad at grade. Although this requirement adds considerably to the expense of building the street, the public safety and convenience demand it in establishing such an important thoroughfare as this. The present grade of the railroad, at the point where it will pass over the street, is sixteen feet.

It is desirable, of course, that highways should pass over railroads wherever it is practicable. In this case the crossing at high grade would necessitate raising the street to grade thirty-seven at the bridge; and all the parties interested agree in the opinion that the low grade is the only practicable one.

The estimates for laying out and building the street, as made up by the Street Commissioners and the City Engineer, are as follows:—

For filling Swett street (including slopes), 23,000 squares, at \$6	\$138,000
Rip-rap wall (north side, west of railroad bridge), 1,600 square yards, at \$1.50	2,400
Displacement of tide-water, 39,000 cubic yards, at 37½ cents	14,625
For filling to raise the grade of the Hartford and Erie Railroad (including slopes), 13,000 squares, at \$5	65,000
Rip-rap wall, for raising railroad, 5,000 square yards, at \$1.50	7,500
Displacement of tide-water on account of raising railroad, 17,000 cubic yards	6,375
Railroad bridge over Swett street	26,227
Estimate of land damages	117,540
Wooden sluiceway under Swett street	9,789
Paving, or macadamizing, setting edgestones, fencing, etc.	87,600
Total estimates	<u>\$475,056</u>

The owners of unoccupied lands and flats through which the street is extended have shown, from the beginning, a disposition to co-operate heartily with the city in carrying out the improvement. They offered to give the lands and flats taken from their several estates for the widening and exten-

sion of the street, and release all grade damages, including the right to slope the filling on their lands; and, as it was somewhat doubtful whether the city would be able to collect betterments from a portion, at least, of the abutters, they also agreed to contribute, towards the building of the street, such an amount as the Street Commissioners might decide to be just and equitable.

At the request of your committee the commissioners prepared a statement of the amounts which, in their opinion, should be paid by these abutters who had given their lands and released grade damages, and by others who were interested in the improvement, but who were not abutters on the street and not liable to assessment under the betterment law. These parties have severally signified their willingness to contribute the sums designated — the whole amounting to \$60,000. The estimated value of land damages released is \$39,891.44; making the total amount contributed in this way, \$99,891.44. The necessary papers to make the arrangement binding will be signed as soon as they can be prepared by the City Solicitor. In addition to this contribution the city will obtain a considerable amount from other abutters by assessments in the usual way after the street is laid out and opened to public travel.

The necessity of providing better facilities for communication between South Boston and Roxbury has long been recognized, and a street would have been laid out years ago, had it not been for the onerous requirements of the State in regard to building a pile structure over South Bay. Under the act passed last winter, the Harbor Commissioners have approved plans by which the expense of construction in tide-waters is reduced to the minimum.

The times are peculiarly favorable to the consummation of this great public improvement upon terms the most advantageous to the city. No one doubts that this thoroughfare is greatly needed for the public convenience at this time, and

that it must be built in a very few years, if not now. The individuals most largely benefited have met the city in a very liberal spirit. If the work is delayed, the land damages and the cost of grading will be largely increased.

For these reasons the committee would recommend the City Council to concur with the Street Commissioners in the passage of the resolve and order; and they would also recommend the passage of the accompanying order to provide the means.

For the Committee,

JOHN T. CLARK,

Chairman.

Ordered, That the Committee on Finance be requested to report an order providing the means for widening and extending Swett street from Albany street to Dorchester avenue, in accordance with the estimates of the Street Commissioners and the City Engineer.

MINORITY REPORT.

The undersigned, a member of the Joint Committee on Streets, respectfully dissents from the recommendation of the majority in relation to the extension of Swett street, and begs leave to state his reasons therefor. The present financial condition of the city is such that the government would not be justified in entering upon any new and expensive undertaking, unless it was clearly shown that the public interests would suffer by delay. In the case now under consideration no such exigency exists. The amount of travel which would be accommodated by the proposed new street would be very small for many years to come. We are called upon to add to our already heavy burdens for the purpose of providing for a condition of things in the future which may never exist. But admitting that the territory through which this street is laid out will in time be occupied for business purposes, or for dwelling-houses, and that a thoroughfare similar to the one proposed will be required, it is by no means certain that delay will add to the expense on the part of the city. On the contrary, it is more likely that it will be reduced thereby. The first cost of the improvement may be placed, in round numbers, at half a million dollars, and the city would inevitably be involved in other expenses growing out of it. The benefit, for the present at least, would inure mainly to the owners of the unoccupied lands and flats adjoining, and their proposition to contribute one-fifth of the first cost cannot, under the circumstances, be characterized as a liberal one.

The construction of this street will give a definite market value to that which is now practically valueless. Delay on

the part of the city, instead of causing these interested parties to withdraw their offer, will probably lead them, and should lead them, to offer greater inducements towards carrying out the improvement. If the street is to be laid out at this time in advance of the immediate necessities of public travel, there is no reason why it should not cross the Hartford & Erie Railroad at grade. There are numerous railroad crossings at grade in the busiest streets in the city; and the proposition to raise the road-bed of this railway and build a bridge at an expense of over \$100,000, for the alleged purpose of accommodating the comparatively small amount of travel through this street, is the most extravagant ever presented to the City Council. By the time the street becomes of any practical value the railroad may be discontinued or its location changed; and, as a matter of fact, it is quite as inconvenient and dangerous to pass under a railroad as it is to cross it at grade. If the subject was properly presented to the Legislature, the city would undoubtedly be relieved from this great expense.

In every view of the case, therefore, it appears to be inexpedient for the city to concur with the Street Commissioners at this time; and the undersigned would recommend that the whole subject be referred to the next City Council.

CYRUS A. PAGE.

City Document. — No. 108.

CITY OF BOSTON.



REPORT OF COMMITTEE ON WATER

ON SUBJECT OF PROPOSED

PURCHASE OF JAMAICA POND

AND OF

WATER SUPPLY

FOR

WEST ROXBURY AND BRIGHTON.

1874.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Dec. 21, 1874.

Read once and ordered to be printed.

Attest:

S. F. McCLEARY,
City Clerk.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Dec. 21, 1874.

The Joint Standing Committee on Water, to whom were referred the petitions of G. Winthrop Coffin and others, and John C. Pratt and others, of Ward 17, asking the city to secure by purchase the property of the Jamaica-pond Aqueduct Company, for the purpose of supplying the citizens of said ward with pure water, having carefully considered the subject, would respectfully report that the petitions were referred to the City Engineer, with the request that he would consider the whole subject and report the facts, as to the value of the property and the best method of supplying the West Roxbury and Brighton Districts with water. The report of the Engineer is appended hereto, giving full information in regard to the matter.

The committee are of opinion that the price asked for the property (\$200,000) is more than its real value, and therefore report that no action is necessary so far as relates to the purchase of Jamaica pond. The Engineer suggests that West Roxbury and Brighton can be supplied for a few years from the Brookline Water Works, which are favorably located for that purpose. Your committee therefore recommend the passage of the accompanying order.

For the Committee,

S. B. STEBBINS,

Chairman.

Ordered, That the Cochituate Water Board be authorized to confer with the Water Board of the town of Brookline, and ascertain upon what terms a supply of water can be furnished to the inhabitants of Wards 17 and 19, for a term of either three or five years, and report thereon to the City Council.

APPENDIX.

OFFICE OF CITY ENGINEER,
CITY HALL, BOSTON, Dec. 21, 1874.

ALDERMAN S. B. STEBBINS,

Chairman Joint Standing Committee on Water:—

SIR,—In answer to the vote of your committee, referring “the petitions of John C. Pratt and G. Winthrop Coffin, that the city would purchase Jamaica pond, to the City Engineer, with request that he report the facts as to the value of the property in question, and the best method of supplying West Roxbury and Brighton with water,” I would respectfully submit the following:—

JAMAICA POND.

The property of the Jamaica-pond Aqueduct Co. consists of the rights and privileges secured by act of Legislature, Ward’s pond and adjacent lands, and of the pipe-system of distribution with its appurtenances.

I know of no precise standard by which to estimate the value of these items.

The works were purchased from their original owners, by Boston, in 1851, for the sum of \$45,000, the objects of the purchase being, “1st, to be rid of rival works; 2d, to quiet all claims for injury to their pipes by laying down our pipes; 3d, to annul the privilege of breaking up and injuring the streets whenever and wherever they saw fit.” In 1856 they were sold to the present owners for the sum of \$32,000, with the proviso that no water from them should be distributed within the limits of the city as laid down at that date.

At the time these purchases were made, the value of the property consisted almost entirely of the franchise; hence they may be said, in a certain sense, to determine the value of the first item.

The company own about six acres of land, which are valued by the assessors at \$15,700.00.

It has a little over eleven and one-half miles of cast-iron pipes laid in various streets of Boston Highlands and the town of Brookline, varying in diameter from three to twelve inches. The annexed table will show the sizes and lengths of these pipes, also the sizes and lengths of the pipes belonging to the Cochituate works laid in the same streets.

The estimated cost of the Jamaica-pond pipes laid, at present prices, is about \$88,000, of which sum \$20,000 is to be charged to the pipes laid in Brookline.

Those of three and four inches diameter are of little or no value to Boston, and the same may be said of the larger sizes laid in streets in which there are pipes of the Cochituate works. It will be seen, therefore, that the pipe-system is of very little value to this city, so far as its use in connection with the Cochituate works is concerned.

The method of estimating the value of this property which was used in the hearing before your committee, was somewhat as follows :—

A yearly revenue is derived from the works, the greater portion of which is paid by water-takers living in Boston (and on streets in which the Cochituate pipes are laid). Should the city buy the works, and discontinue their use, the water-takers above mentioned would be compelled to take a supply from the Cochituate works, and would pay a revenue to the city which now finds its way into the hands of the company. It was said the works were worth a sum of which the net revenue was the interest, and that the city would be largely benefited by their purchase for such a sum, in at once ridding herself of claims for damages to pipes, and the injury sustained by the opening of streets for repairs, etc.

The total revenue from water-takers for the past four years has been as follows :—

1870,	.	.	.	.	.	.	.	.	\$17,417 58
1871,	.	.	.	.	.	.	.	.	16,582 96
1872,	.	.	.	.	.	.	.	.	17,317 69
1873,	.	.	.	.	.	.	.	.	16,768 47

Average for four years, \$17,021 80.

From this sum, about \$1,800, collected from takers in Brookline, should be deducted, as those takers will soon be provided with a supply from the Brookline works, of equal, if not superior, quality and under a much greater head.

In stating the cost of maintenance, I assume that, should the Jamaica-pond works be purchased, they would be thrown out of use, and the supply from them substituted by one from the Cochituate works. As we already maintain distributing pipes in most of the streets occupied by the company, the additional expense of maintenance would be due chiefly to the service-pipes; this may be roughly taken at \$1,000 per year; hence the net revenue from the Boston takers, with the Jamaica-pond rates, would be about \$14,200, which, at 7 per cent., is the interest on \$200,000.

Mr. Charles Stanwood, Superintendent of the works, is of the opinion that, with the Cochituate rates, the revenue would be increased by at least 33 per cent. This is also stated in the paper presented by the petitioners enumerating the benefits to be derived by the city in making the purchase.

It is suggested, in the petition, that the pond may be made of service in supplying Jamaica Plains and the higher lands of West Roxbury by means of Holly pumps, and also would serve as a reservoir for the storage within the heart of the city of the water from the Cochituate pipes, which can readily be connected with those leading from the pond.

The natural daily yield of the pond in dry seasons has been stated to be from 200,000 to 300,000 gallons. The owners think that the present yield can be doubled by raising the dam of Ward's pond about 20 feet; but Mr. Herschel, Civil Engineer, in a report upon the supply of water for the town of Brookline, 1873, estimates the yield after the improvement shall have been made will be about 300,000 gallons in 24 hours.

A supply upon the direct system, which is that employed by the Holly Company, requires the pumps to be operated night and day, and that the delivery from the pumps shall fluctuate with the constantly varying rate of consumption. The cost of maintenance and operating under such conditions is relatively very large, and a supply so small as that afforded by Jamaica-pond will not warrant the cost of erecting and operating machinery, such as, with-

out the aid of a high level reservoir, would be needed to meet the demands for water in times of serious fires.

If, however, the supply for the lands in West Roxbury above grade 60 be drawn from Parker-hill reservoir, a pump to be worked during the day hours only might be advantageously used in times of short supply to force the pond water into the main leading from the reservoir. The cost of these pumps would not be large; but the system cannot be recommended, except as a means of relief under certain emergencies, such as a short supply from Lake Cochituate within the next few years, an accident to the Highland works, or in case these latter works are overtaxed. The elevation of the pond, about 55 feet above mean high water, is not suitable for a reservoir to be used in connection with the Cochituate distributing system. The only advantages of importance to be gained by the city in the purchase of this property are: —

1st. An increase in the water revenue.

2d. The annulling of the rights possessed by the company to open streets, etc.

3d. The possession of a ready means of increasing or maintaining the high-service supply in case of emergency.

SUPPLY OF WEST ROXBURY AND BRIGHTON.

If the Sudbury-river scheme for an additional supply be adopted, and the existing restrictions upon the use of water be kept in force for the following two or three years, a supply to Chestnut-hill reservoir may be provided which will meet the probable wants of the city, even if the distribution shall be extended into the newly annexed towns; as, for the first year or two, the daily consumption in these towns will be but a few hundred thousand gallons, — a quantity hardly appreciable in a supply of eighteen or twenty millions.

Those portions of West Roxbury and Brighton which can be reached from the low-service system of the Cochituate works can easily be provided for by the extension of the low-service mains.

That portion of West Roxbury which lies above grade 60 may be conveniently supplied from Parker-hill reservoir; as the high-service works are of sufficient capacity to maintain the supply for

a few years. The higher lands of Brighton also may be supplied from this source, but very long and costly mains will be required to conduct the water, which will be of little or no value when the pumping-works and centre of the high-service distribution are moved to the neighborhood of Chestnut-hill reservoir. (See City Doc. No. 38, 1873.)

Both Brighton and West Roxbury can be supplied better from the Brookline works, now building, provided that a contract for a supply for a short term of years can be made with that town. (Mr. Kirby, of the Brookline Water Board, is of the opinion that such a contract can be made.)

The reservoir of these works, being in the vicinity of Chestnut-hill reservoir, is favorably located for this purpose. It is somewhat higher than Parker-hill reservoir. The mains laid from it will remain in permanent use, and the supply of water to it will be ample for the necessities of the three places.

Water will be introduced into Brookline early next season, or before a system of pipes can be laid in West Roxbury and Brighton.

JOS. P. DAVIS,
City Engineer.

Table showing Size and Length of Jamaica Pond and Cochituate Water Pipes in Boston Highlands.

STREET.	JAMAICA POND.		COCHITUATE.	
	Length.	Size.	Length.	Size.
Parker St. From Ward to Madison Ct. (coated) . . .	<i>ft.</i> 1,430	<i>in.</i> 12	<i>ft.</i>	<i>in.</i>
Ruggles St. From Tremont to Parker (coated) . . .	1,575	12	1,080	12
Tremont St. From Prentiss to Factory	580	12	600	12
“ Beyond Heath	430	12	400	12
Total	4,015			
Three new 12-inch gates.				
“ From Francis to Heath	2,250	10	2,250	12
“ From Factory to Cabot	2,090	10	2,090	12
Ward St.	1,960	10		
From Tremont to Ward	660	10		
From Ward to Tremont	1,700	10		
Total	8,660			
Four old 10-inch gates.				
Cabot St. From Ruggles to Vernon	730	8	730	6
Ruggles St. From Tremont to Cabot	500	8	500	12
Palmer St. From Washington to Eustis	1,050	8	600	6
Vernon St. Cabot to Washington	1,385	8	1,385	6
Washington St. Vernon to Sumner	280	8	280	12
Total	3,945			
Two old 8-inch gates.				
Avon Pl. From Ruggles (coated)	380	6		
Albany St. From Eustis to Hampden	1,705	6	1,410	12
Greenleaf St. From Parker (coated)	380	6		
Mechanic St. From Ruggles (coated)	570	6		
Parker St. Beyond Madison Ct. (coated)	720	6		

TABLE SHOWING SIZE AND LENGTH OF WATER PIPES. — *Continued.*

STREET.	JAMAICA POND.		COCHITUATE.	
	Length.	Size.	Length.	Size.
	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
Rogers Ave. From Ruggles (coated)	790	6		
Russell's Ct. From Ruggles (coated)	500	6		
Tremont St. From Prentiss to Washington	1,110	6	1,110	12
Washington St. From Eustis to Ball	630	6	630	12
Total	6,765			
Two old 6-inch gates. Seven new 6-inch gates.				
Adams St. From Yeoman to Eustis	550	4	550	6
Ball St.	290	4	290	6
Cabot St. From Ruggles towards Tremont	1,185	4	750	6
Eustis St. From Albany to Orchard	580	4	580	6
George St.	320	4	320	6
Guild Row (now Washington)	480	4	480	12
Hampden St. From Reed to Swett	1,020	4	1,020	12
Madison St.	490	4	490	6
Orchard	520	4	520	4
Ruggles St. Tremont to Parker	1,575	4		
Washington St. Eustis to Warren	585	4	585	12
Yeoman St. Adams to Albany	790	4	790	6
Total	8,385			
Nine old 4-inch gates.				
Auburn St.	120	3	120	6
Benton St.	335	3		
Berlin St.	860	3		
Belmont St.	470	3	470	6
Burke St.	340	3		
Clay St.	440	3	250	6
Chadwick St.	660	3	660	6
Church Pl.	180	3		

TABLE SHOWING SIZE AND LENGTH OF WATER PIPES. — *Continued.*

STREET.	JAMAICA POND.		COCHITUATE.	
	Length.	Size.	Length.	Size.
	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
Coventry St.	340	3		
Cunard St.	340	3		
Davenport St.	245	3		
Dallas Pl.	130	3		
Eustis St. From Harrison Ave. to Washington . . .	380	3	380	6
" From Adams to Prescott	225	3	225	6
Factory St.	420	3	420	6
Franklin Pl.	345	3		
Hampden St. Adams to George	860	3	860	12
Hampshire St.	1,210	3	630	6
Harrison Ave. From Eustis to Hunneman	640	3	640	6
Island St. From Hampden to Gerard	700	3	700	6
Kemble St. From Reed	1,050	3		
Mall St.	670	3	670	6
Hilton St.	180	3		
Milford Pl.	560	3		
Place from Milford Pl.	240	3		
Oxford St.	440	3		
Parker St. From Smith to Ward	800	3	650	12
Prentiss St.	190	3	190	6
Prescott St.	365	3	365	4
Reed St.	740	3		
Reed's Ct.	230	3	230	4
Swett St.	810	3	810	6
Simmons St.	675	3		
Shawmut Ave. From Vernon to Ruggles	500	3	500	6
Sumner Pl.	235	3	235	6
Weston St. From Cabot to Windsor	680	3	400	6
Total	17,605			
Fourteen old 3-inch gates.				

TABLE SHOWING SIZE AND LENGTH OF WATER PIPES.— *Concluded.*

STREET.	JAMAICA POND.		COCHITUATE.	
	Length.	Size.	Length.	Size.
	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
BROOKLINE.				
Pond Ave. (1,200 ft. coated)	4,660	12		
Old	1,750	6		
Boston Weight (coated)	3,000	6		
	1,200	4		
	1,200	3		
Two new 6-inch gates.				
Two old 6-inch gates.				
Four old 4-inch gates.				
One old 3-inch gates.				

City Document. — No. 109.

CITY OF BOSTON.



REPORT
OF
COMMITTEE ON BATHING.

1874.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Dec. 28, 1874.

The Joint Standing Committee on Free Bathing Establishments beg leave to submit the following report:—

The appropriation made by the City Council to cover the expenses of the Bathing Department for the financial year, 1874-75, amounted to \$40,000. The following order, authorizing the committee to make expenditures from their appropriation, was passed by the City Council, and approved by the Mayor on the first day of May:—

Ordered, That the Committee on Bathing be authorized to repair and maintain free public bathing-houses for men and boys, and for women and girls, in different sections of the city, at an expense not exceeding \$18,000; also to employ such assistance as may be required for the proper care and management of the several houses, at an expense not exceeding \$22,000; said sums to be charged to the appropriation for Public Baths.

At the beginning of the present season the bath-house (formerly No. 2), situated at Cragie's bridge, was discontinued. Three new houses, all situated in the Charlestown District, have been added to the department this year.

It was thought advisable by the Committee that Bath-House No. 16, at Commercial Point, Dorchester, should be used by women and girls instead of men and boys (as formerly), and the change was accordingly made, taking effect at the opening of the season.

The several houses were opened on the first of June, the locations and regulations being as follows:—

LOCATIONS.

FOR MEN AND BOYS.

- No. 1.—West Boston Bridge, foot of Cambridge street, under the charge of Councilman Abbott.
- No. 3.—Charles river Bridge, near Causeway street, under the charge of Councilman Abbott.
- No. 5.—East Boston Sectional Dock, Border street, under the charge of Alderman Brooks.
- No. 7.—Federal street Bridge, under the charge of Alderman Power.
- No. 8.—Mt. Washington avenue Bridge, near Federal street, under the charge of Alderman Power.
- No. 10.—South Boston, foot of L street, Dorchester Bay, under the charge of Councilman Walbridge.
- No. 11.—Dover street, at South Pier, under the charge of Councilman Whiston.
- No. 13.—Boston Highlands, Cabot street, under the charge of Councilman Sweat.
- No. 15.—Norfolk Avenue, under the charge of Councilman Martin.
- No. 17.—East Boston, Maverick street, under the charge of Alderman Brooks.
- No. 18.—Charlestown, Chelsea Bridge, under the charge of Alderman Prescott.

FOR WOMEN AND GIRLS.

- No. 4.—Warren Bridge and Causeway street, under the charge of Councilman Walbridge.
- No. 6.—East Boston Sectional Dock, Border street, under the charge of Alderman Brooks.
- No. 9.—South Boston, foot of Fifth street, under the charge of Alderman Power.

- No. 12.—Dover street, at South Pier, under the charge of Councilman Whiston.
- No. 14.—Boston Highlands, Cabot street, under the charge of Councilman Sweat.
- No. 16.—Dorchester, Commercial Point, under the charge of Councilman Martin.
- No. 19.—Charlestown, Chelsea Bridge, under the charge of Alderman Prescott.

FOR BOTH MALES AND FEMALES.

- No. 20.—Charlestown, Malden Bridge, under the charge of Alderman Prescott.

The hours for bathing at this house are so arranged that men and boys are admitted from 5 to 8 A. M., 12 to 3 P. M., and $6\frac{1}{2}$ to 9 P. M.; women and girls from $8\frac{1}{2}$ to 11 A. M., and $3\frac{1}{2}$ to 6 P. M. Sundays,—for men and boys only, from 5 to 9 o'clock A. M.

REGULATIONS.

[These apply to the management of all the houses, except with regard to the hours for bathing at Bath-house No. 20, which are modified as above.]

The baths will be open daily, from June 1 to September 30, as follows:—

MALES.

Week Days . . . 5 A. M. to 9 P. M.
Sundays . . . 5 A. M. to 9 A. M.

FEMALES.

Week Days . . . 6 A. M. to 8 P. M.
Sundays . . . 6 A. M. to 9 A. M.

All the bath-houses will be closed by the Superintendents at 10 o'clock, P. M., on week days, and at $9\frac{1}{2}$ o'clock, A. M., on Sundays.

Each bather shall provide his own towels and soap. Female bathers shall be required to furnish suitable bathing-dresses. Those desiring towels can obtain them of the Superintendent at three cents each.

Boys and girls under fifteen years of age shall not be admitted to the bathing-houses after 6 o'clock, P. M., and the decision of the Superintendent against admission shall be final.

Each Superintendent shall have full charge of his premises, and authority to withhold the facilities from all not conforming to these rules; and he will be required to render every assistance to applicants for baths, who, in case of insult or deprivation of privileges otherwise than as provided for in these rules, can appeal to the chairman of the Bathing Committee.

No smoking, profanity, or noisy conversation will be allowed on the premises; and any person guilty of defacing the dressing-rooms, fences or tanks, by writing, marking or cutting, will be excluded from the baths, or arrested, according to the nature of the offence.

All questions of priority in bathing, or of use of dressing-rooms, must be referred to the Superintendent, whose decision shall be final.

A police officer will be in constant attendance, for the purpose of preserving order and enforcing these regulations, in concurrence with the Superintendent.

The committee trust that all bathers will conduct themselves with propriety and decorum.

Per order Committee on Bathing,

JAMES POWER,

Chairman.

Boston, June 1, 1874.

The following statements show the expense of maintaining each establishment during the year, and the number of bathers of each class : —

EXPENSES.

No. 1. — West Boston Bridge...	\$593 28
No. 3. — Charles River Bridge.....	801 15
No. 4. — Warren Bridge.....	613 01
No. 5. — East Boston, Border Street.....	886 95
No. 6. — East Boston, Border Street.....	886 95
No. 7. — Federal Street Bridge.....	815 22
No. 8. — Mt. Washington Avenue Bridge.....	629 13
No. 9. — South Boston, foot of Fifth Street.....	1,072 86
No. 10. — South Boston, foot of L Street.....	1,389 06
No. 11. — Dover Street Bridge.....	853 09
No. 12. — Dover Street Bridge.....	853 10
No. 13. — Boston Highlands, Cabot Street.....	1,330 75
No. 14. — Boston Highlands, Cabot Street.....	1,330 74
No. 15. — Norfolk Avenue.....	713 54
No. 16. — Dorchester, Commercial Street.....	427 15
No. 17. — East Boston, Maverick Street.....	780 60
No. 18. — Charlestown, Chelsea Bridge.....	1,152 29
No. 19. — Charlestown, Chelsea Bridge.....	688 92
No. 20. — Charlestown, Malden Bridge.....	960 91
General expenses for the twelve months.....	12,102 80
Total	<u>\$28,881 50</u>

The average expense per bath for the season of 1874 was .020+

“	“	“	1873	“	.026+
“	“	“	1872	“	.026+
“	“	“	1871	“	.026+
“	“	“	1870	“	.015+

DETAILS OF THE BATHS.

LOCALITY.		SUPERINTENDENT.					JUNE, 1874.					JULY, 1874.				
		Men.	Boys.	Women.	Girls.	Total.	Men.	Boys.	Women.	Girls.	Total.	Men.	Boys.	Women.	Girls.	Total.
No. 1.	West Boston Bridge.	40,386	49,001			89,387	22,730	30,524			53,254					
No. 3.	Charles River Bridge.	6,760	31,246			38,006	14,817	46,841			61,658					
No. 4.	Warren Bridge.			510	3,202	3,712			1,045	5,796	6,841					
No. 5.	East Boston, Border street.	8,727	20,305			29,032	14,621	33,163			47,784					
No. 6.	East Boston, Border street.			2,367	11,686	14,053	7,870	33,010			40,880					
No. 7.	Federal-st. Bridge.	4,170	16,179			20,349	13,650	33,098			46,748					
No. 8.	Mt. Washington avenue Bridge.	9,020	23,490			32,510	17,068	28,415			49,180					
No. 9.	South Boston, foot of Fifth st.			682	1,024	1,706					24,211					
No. 10.	South Boston, foot of L street.	11,330	14,287			25,617	19,743	50,825			70,568					
No. 11.	Dover-st. Bridge.	5,278	27,068		1,598	32,946	17,042	34,958			50,368					
No. 12.	Dover-st. Bridge.	3,095	17,512		342	20,617	7,042	34,958			42,000					
No. 13.	Boston Highlands, Cabot street.				2,327	2,669			2,435	14,550	16,185					
No. 14.	Boston Highlands, Cabot street.								504	2,143	26,708					
No. 15.	Norfolk avenue.	1,447	7,555			9,002	5,420	21,288			27,047					
No. 16.	Dorchester, Commercial Point.			220	1,011	1,231					11,415					
No. 17.	East Boston, Maverick street.	2,574	6,988			9,562	3,278	8,187			14,007					
No. 18.	Charlestown, Chelsea Bridge.	1,715	6,898			8,613	2,553	11,454			14,007					
No. 19.	Charlestown, Chelsea Bridge.			685	3,116	3,801			1,804	8,827	10,631					
No. 20.	Charlestown, Malden Bridge.	547	4,344	100	1,549	6,500	1,712	5,553	536	3,560	11,361					
Total Baths, 1874.		95,049	225,473	7,564	36,963	365,049	134,723	317,266	25,691	85,465	563,145					
Total Baths, 1873.		74,783	235,171	5,242	30,718	345,914	138,863	344,145	16,900	56,616	556,529					
Increase, 1874.		20,266		2,322	6,245	19,135			8,791	28,849	6,616					
Decrease, 1874.			9,698				4,145	26,879								

DETAILS OF THE BATHS.

REPORT ON BATHING.

9

LOCALITY.		SUPERINTENDENT.				AUGUST, 1874.				SEPTEMBER, 1874.			
			Men.	Boys.	Women.	Girls.	Total.		Men.	Boys.	Women.	Girls.	Total.
No. 1.	West Boston Bridge	P. L. Salmon	20,531	29,316	..	..	49,847	No. 1.	1,093	1,619	..	..	2,712
No. 2.	Charles River Bridge	S. L. Crimlisk	5,114	29,882	..	..	34,996	No. 2.	1,885	12,729	..	..	14,614
No. 3.	Warren Bridge	Josephine T. Ballard	..	..	385	2,639	3,024	No. 3.	..	..	65	728	793
No. 4.	East Boston, Border street	Edward A. Swett	8,566	23,655	..	..	32,221	No. 4.	5,013	12,662	..	..	17,675
No. 5.	East Boston, Border street	Rebecca Dalton	..	..	4,922	10,478	21,400	No. 5.	..	..	1,902	8,482	10,384
No. 6.	Federal-st. Bridge	M. E. Brady	4,172	23,236	..	..	27,408	No. 6.	337	1,748	..	..	2,085
No. 7.	Mt. Washington-avenue Bridge	P. J. Grace	10,111	24,706	7,953	13,637	34,517	No. 7.	2,803	10,731	..	..	13,534
No. 8.	South Boston, foot of Fifth st.	Clara Laha	12,271	17,720	..	..	29,991	No. 8.	7,454	9,804	..	..	17,258
No. 9.	South Boston, foot of L street	Amos L. Poole	18,922	19,349	2,303	12,182	38,271	No. 9.	3,830	4,345	..	..	8,175
No. 10.	Dover-street Bridge	George Whiston	..	..	..	..	19,989	No. 10.	..	..	890	3,468	4,358
No. 11.	Dover-street Bridge	Mary Southard	3,100	16,889	380	3,514	19,885	No. 11.	1,224	7,895	394	2,954	3,348
No. 12.	Boston Highlands, Cabot street	John Killion	..	..	1,037	2,625	3,663	No. 12.	322	3,098	727	2,014	3,420
No. 13.	Boston Highlands, Cabot street	Harriet E. Crombie	2,147	12,214	..	..	14,361	No. 13.	..	..	..	..	..
No. 14.	Boston Highlands, Cabot street	John McNamara	..	..	5,125	7,261	12,386	No. 14.	1,286	3,037	..	..	4,323
No. 15.	Dorchester, Commercial Point	Ellen Martin	2,135	5,900	824	4,966	6,603	No. 15.	257	2,431	..	..	2,688
No. 16.	Dorchester, Commercial Point	C. E. Dodge	703	5,900	..	..	5,790	No. 16.	..	..	277	983	1,260
No. 17.	East Boston, Maverick street	J. W. Kenfield	..	..	305	2,438	6,557	No. 17.	322	1,379	145	669	2,515
No. 18.	Charlestown, Chelsea Bridge	Sarah E. Hart	..	..	..	..	..	No. 18.	..	..	..	..	..
No. 19.	Charlestown, Chelsea Bridge	O. Dickson, Jr. and }	906	2,908	18,089	58,480	376,148	No. 19.	25,836	71,478	5,180	20,330	122,824
No. 20.	Charlestown, Malden Bridge	Catherine Dunn	..	..	11,717	39,686	384,180	No. 20.	22,988	69,583	2,152	8,580	103,303
Total Baths, 1874			88,679	210,900	6,372	18,794	..	8,032	2,843	1,895	3,028	11,750	19,521
Total Baths, 1873			87,500	245,277	..	..	..	..	..	..	..	..	..
Increase, 1874			1,179	34,377	..	..	..	..	..	..	..	..	..
Decrease, 1874			..	..	..	..	..	..	..	..	..	..	..

H. A. WILLARD, General Superintendent.

RECAPITULATION.

Total Baths at Bath House, No. 1,	.	.	.	.	.	.	195,200
“ “ No. 3,	.	.	.	.	.	.	149,274
“ “ No. 4,	.	.	.	.	.	.	14,350
“ “ No. 5,	.	.	.	.	.	.	126,712
“ “ No. 6,	.	.	.	.	.	.	73,620
“ “ No. 7,	.	.	.	.	.	.	90,722
“ “ No. 8,	.	.	.	.	.	.	127,609
“ “ No. 9,	.	.	.	.	.	.	49,319
“ “ No. 10,	.	.	.	.	.	.	122,568
“ “ No. 11,	.	.	.	.	.	.	129,960
“ “ No. 12,	.	.	.	.	.	.	52,451
“ “ No. 13,	.	.	.	.	.	.	91,725
“ “ No. 14,	.	.	.	.	.	.	26,896
“ “ No. 15,	.	.	.	.	.	.	53,491
“ “ No. 16,	.	.	.	.	.	.	10,282
“ “ No. 17,	.	.	.	.	.	.	32,561
“ “ No. 18,	.	.	.	.	.	.	31,911
“ “ No. 19,	.	.	.	.	.	.	21,482
“ “ No. 20,	.	.	.	.	.	.	27,033
Total	.	.	.	.	.	.	1,427,166
							1874.
Whole number men bathers	.	.	.	.	.	.	344,287
“ boy bathers	.	.	.	.	.	.	825,117
“ women bathers	.	.	.	.	.	.	56,524
“ girl bathers	.	.	.	.	.	.	201,238
							1,427,166
							1873.
							324,139
							894,176
							36,011
							135,600
							1,389,926
Increase, 1874	.	.	.	.	.	.	37,240

The total expense of maintaining the baths during the municipal year,—the number of houses being increased from 17 to 19,—as before given, was \$28,881.50, against \$37,299.43 in 1873; thus showing a difference of the sum of \$8,417.93 in favor of this year.

Respectfully submitted.

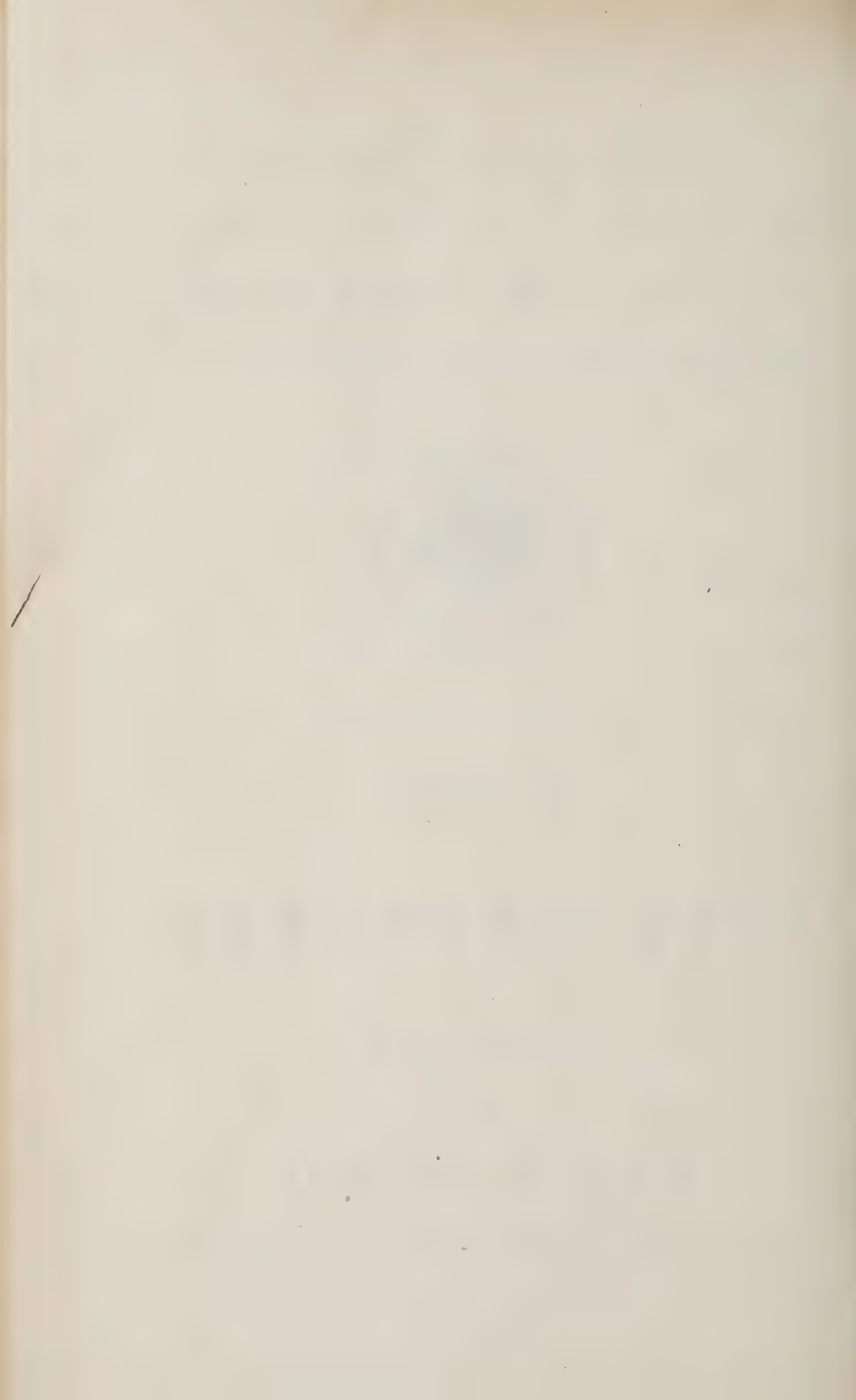
JAMES POWER,	}	<i>Committee.</i>
WM. F. BROOKS,		
CHAS. J. PRESCOTT,		
DAVID WHISTON,		
JOHN B. MARTIN,		
JACOB ABBOTT,		
F. G. WALBRIDGE,		
THACHER F. SWEAT,		

City Document. — No. 110.

CITY OF BOSTON.



REPORT
OF
CITY ENGINEER
ON
CAPACITY
OF
FLAX POND.



CITY OF BOSTON.

OFFICE OF THE CITY ENGINEER, CITY HALL,
BOSTON, Dec. 21, 1874.

To the City Council of Boston: —

In obedience to your order "That the City Engineer be directed to make such surveys and measurements as may be necessary to ascertain the actual amount of water that can be furnished from Flax, Sluice and Cedar ponds," I have made such surveys and measurements, and now have the honor to present the results: —

A careful survey of the water-shed of the valley has been made, and its area found to be 2.61 square miles. The area, as computed from a survey made a few years ago, for the city of Lynn, is 2.48 square miles. In the survey just completed, nearly 100 acres of doubtful territory have been included, which probably accounts for the difference of results above shown.

It having been claimed that these ponds are largely fed from springs having their source outside the apparent water-shed, special attention was given to the discovery of their effect, if any, upon the yield of water. The levels of the neighboring water courses and ponds were taken, and the heights of water in the intervening wells were measured; also weir measurements of the flow of water were made at the outlet of Flax pond, and at a point a little below Cedar pond.

The data thus obtained show conclusively that there was no appreciable flow into any of the ponds from any other source than the natural water-shed.

The natural flow at the outlet of Flax pond was found to be about 312,000 gallons in 24 hours, or about 128,400 gallons per square mile of water-shed. The same relative flow was found at the weir below Cedar pond, showing that no springs from a distant source found their way into either Flax or Sluice ponds. This flow corresponds to the flow usually found in the streams of eastern Massachusetts in seasons of drought. Thus the flow of the Sudbury in the early part of November of this year, as determined by accurate gaugings, was 135,000 gallons per square mile of water-shed.

The yield of this valley, then, is to be computed from the area of its water-shed, and its capacity for storage. The character of the ground surface—being very steep and rocky—is such as to assure the collection of a large percentage of the rainfall; it is therefore assumed that 16 inches may be collected in the year of extreme drought, and that 20 inches may be collected in each of a series of eight years of low rainfall.

Allowing for the effect of storage and of evaporation from water surfaces, and computing the yield under the above assumptions, it is found to be about 2,000,000 gallons in 24 hours. The ordinary average daily yield would be about $2\frac{1}{2}$ millions.

Respectfully submitted,

JOS. P. DAVIS,

City Engineer.

City Document.—No. 111.

CITY OF BOSTON.



ORDINANCE

TO AMEND AN ORDINANCE

RELATING TO THE

LAW DEPARTMENT.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, BOSTON, Dec. 23, 1874.

The Committee on Ordinances, who were requested to report in relation to providing permanent additional assistance in the Law Department, having carefully considered the subject, would respectfully recommend the passage of the accompanying ordinance.

For the Committee,

ALANSON BIGELOW,

Chairman.

CITY OF BOSTON.

IN THE YEAR ONE THOUSAND EIGHT HUNDRED AND SEVENTY-FOUR.

AN ORDINANCE

TO AMEND AN ORDINANCE RELATING TO THE LAW
DEPARTMENT.

Be it ordained by the Aldermen and Common Council of the City of Boston, in City Council assembled, as follows: —

SECTION 1. The ordinance relating to the Law Department is hereby amended so as to authorize the Mayor to nominate, and, by and with the advice and consent of the Standing Committee of the City Council on Ordinances, appoint, a fourth assistant solicitor, who shall be styled the "City Conveyancer," and who shall possess the same qualifications, and hold his office upon the same tenure, as the other assistants. It shall be the special duty of said fourth assistant to do the work required to be done on the part of the city in examining titles to property and in drafting deeds and conveyances. He shall perform such other professional duties, incident to the office, as may be required of him by the City Solicitor.

SECT. 2. During the sessions of the Legislature the Mayor shall nominate, and, by and with the advice and consent of the Committee on Ordinances, appoint, a counsellor at law, to be known as the "Legislative Counsel" of the City of Boston, who shall perform all the duties heretofore provided by ordinance to be done by the City Solicitor and assistant solicitors, so far as they relate to matters before the Legisla-

ture of the Commonwealth, or any committee thereof; and who shall perform all other professional duties, incident to his office, which may be required of him by the Mayor, the City Council, or either branch of the City Council, or by the Committee thereof on Legislative Matters. Said Legislative Counsel shall hold office only during the sessions of the Legislature, and shall receive such compensation as may be determined by the Committee on Ordinances.

SECT. 3. Whenever, in the opinion of the Standing Committee of the City Council on Ordinances, such an emergency arises as to require that additional assistance should be furnished in the Law Department, the said committee may provide such assistance for the time being as they may deem expedient, and establish the compensation therefor.

City Document. — No. 112.

CITY OF BOSTON.



COMMUNICATION FROM THE BOARD OF HEALTH

UPON THE NECESSITY OF

IMPROVED SEWERAGE

IN THE

ROXBURY CANAL, STONY BROOK, AND
MUDDY BROOK.

IN BOARD OF ALDERMEN, Dec. 28, 1874.

Ordered to be printed, and referred to the Committee on
Sewers.

Attest :

S. F. McCLEARY,

City Clerk.

CITY OF BOSTON.

OFFICE OF THE BOARD OF HEALTH,
BOSTON, Dec. 17, 1874.

To the Honorable City Council: —

GENTLEMEN, — Although in our annual report of 1873, and again in 1874, we called the attention of your honorable body to the great importance of a change in our system of sewage, we deem it of such vital importance to the health and comfort of the city at large, but more especially to certain portions of it, that we venture again to urge the subject in a special communication.

There are several places in which the evil is already so great that we mention them in particular.

First — the old Roxbury canal, crossing under Albany street, near Chester park.

Second — The Stony-brook sewer, discharging upon the Back bay flats.

Third — The Muddy-brook sewer, between Brookline avenue and Downer street, in Ward 15.

Roxbury canal, so called, leads in from the South bay, is about fifty feet wide and two thousand feet long, reaching nearly to Harrison avenue. The tide flows in and out but sluggishly. Into these three or four large sewers pour their contents, and when the tide recedes there is left but very shoal filthy water, through which the foul gases from the putrid bottom can be seen bubbling into the atmosphere. At low tide a considerable portion of this filthy bottom is left

bare, giving off the most sickening and even dangerous effluvia into a thickly populated neighborhood. In Northampton street, Chester park, Springfield street, Harrison avenue, Albany street, and especially at the City Hospital, where there is a daily average of 230 patients who require pure air, the stench from the Roxbury canal is often observed and exceedingly annoying.

The Stony-brook sewer, which conveys the sewage of more than half of the former city of Roxbury, or now about thirty thousand inhabitants, terminates at the west side of Parker street, where, at low tide, this immense sewage is left to trickle over the muddy flats, about one hundred acres in extent, to the Charles river beyond. Before this sewage has reached a point where it can diverge from the wharves of the city, it will have travelled more than one-half of the circumference of the city proper, catching at the bridges, wharves, and upon the flats in its course.

An order has recently been passed by the City Council, to extend the channel of the Stony brook, so as to prevent the discharge of the sewerage upon the flats next Parker street.

In addition to the Stony-brook sewer, there are eight others opening into Charles river above Cambridge bridge, which, with their open mouths at low tide discharging their gases into the atmosphere, and their contents into shoal water or upon flats, are doing a great share in making the atmosphere of that part of the city skirting the river and Back bay, at times, absolutely unfit to breathe.

The Muddy-brook sewer coming from Brookline is very large, opens under Brookline avenue, near Tremont street, and is then an open sewer in the immediate rear of dwelling-houses between Brookline avenue and Downer street for a distance of 600 feet, and then crosses the avenue again into the town of Brookline. The water in this brook gets very low in summer, leaving but little besides the sewage matter to flow

through it. The stench from this is very bad, and the people who live near it justly complain. This sewer ought to be covered at once, for a distance of about 600 feet, to prevent evil results which must inevitably come from its present condition.

The places mentioned, although the worst, are not all to which we invite attention. The city proper, being nearly surrounded by tide water and flats, is to the same extent literally fringed with the open mouths of sewers, discharging their gases into the atmosphere, and their other contents upon the shoals, which are left bare next the sea-wall and under the wharves by the receding tide.

The result is, that at low tide, and especially in summer, about the wharves and skirts of the city, where thousands of the laboring class must work during the day, and many more will resort for a cool breeze in the evening, the air, instead of being pure and cool from the water, as it should be, is polluted and made dangerous by the foul breath of the sewers.

That our prevalent summer diseases are largely influenced by this poisoned atmosphere there can be no sort of doubt. The best remedy for the evil complained of may not be so apparent as the evil itself. We beg to suggest, however, that whatever disposition is ultimately made of the sewage, whether carried inland and utilized, or seaward and lost, it should not be discharged at all points in the circumference of our city. If it is to be discharged into the sea — and this for Boston seems the most practicable — there should be the least possible number of outlets, and those well out into the channel of the harbor. We believe the time has come when large main sewers, which can be relied on for the next century to collect and convey the sewage of all others to a proper place for disposal, or to the sea, should be laid. We believe that the very best interests of the city, public economy, and the public health would be well served by beginning this work with the least necessary delay.

The discharge of sewage into the Charles river and the South bay is a constantly growing evil, which already annoys and discomforts many, and if permitted to go on must soon exert a very serious influence upon the health of the entire city. This danger can be averted by carrying the sewage of the city proper, of East Boston and Charlestown District, by one large main from each, fully into the channel of the harbor, where, in deep water and strong currents, the material will be so dissipated and acted upon by the salt water as to become harmless and unobjectionable to the senses before it can be lodged about the city by flood tide. That of South Boston and of the Highland and Dorchester districts should be carried well into deep water in Dorchester bay.

To carry out these suggestions would require surveying and advice of competent engineers who would carefully consider and report not only the best course and plan for these mains, but what they would need to be, without alteration, for the next fifty or one hundred years.

There are many places within the limits of the city, especially in the newly annexed territory, where, although a supply of water has been furnished, there are no means of getting rid of it after it has done its service, and the result is a perfect saturation of the soil about the dwellings by the vast overflow of cesspools and vaults. Typhoid fever and other preventable diseases are frequent in these places, and we fear must continue to be until proper sewage is instituted.

While it is to be regretted that water-pipes have anywhere preceded the laying of sewers, it is but fair to say that the supply of pure water from the pipes, in some of the sections referred to, had become a necessity, and the people would have suffered, but in a little different way, without it.

In many instances the well water gets vitiated in quality, or deficient in quantity, and the supply from the pipes becomes a great blessing.

We would respectfully recommend all possible hastening of the sewers, and a halting of the water-pipes in those sections where the two are not now associated.

THE BOARD OF HEALTH,

By A. W. BOARDMAN,

Chairman.

City Document.—No. 113.

CITY OF BOSTON.



SECOND SEMI-ANNUAL REPORT

OF THE

Inspection of Prisons and Houses of Detention,

IN

SUFFOLK COUNTY,

FOR THE YEAR 1874.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Jan. 2, 1875.

The Special Committee of the Board of Aldermen, who were appointed to inspect the prisons and houses of detention within the County of Suffolk, and make the examinations and reports required by the Statutes of the Commonwealth, beg leave to submit their second semi-annual report for the municipal year 1874.

HOUSE OF CORRECTION.

The Committee visited the House of Correction at South Boston, December 23, 1874. At the previous inspection, on the 15th July, there were in the institution,—

Males	.	.	.	.	.	.	.	510	
Females	.	.	.	.	.	.	.	78	
									588

Committed since,

Males	.	.	.	.	.	.	.	306	
Females	.	.	.	.	.	.	.	47	
									353

Discharged since,

Males	.	.	.	.	.	.	.	316	
Females	.	.	.	.	.	.	.	55	
									371

Remaining at date of last inspection,—

Males	.	.	.	.	.	.	.	506	
Females	.	.	.	.	.	.	.	64	
									570

Pardoned by the Directors	1
“ “ Governor	13
Died	3
Paid fine and costs	8
Discharged by order of the Municipal Court . . .	13
Transferred to East Cambridge House of Correction by order of the Prison Commissioners	1
Escaped	1
Transferred to Taunton Lunatic Hospital for treatment, by order of the Superior Court	1
Discharged at the expiration of sentence . . .	330
Total number discharged from the institution . . .	371

The male prisoners are employed in making slippers, contract clothing, and doing the necessary work about the institution. The female prisoners are employed in making contract clothing, knitting, scrubbing, washing, ironing, mending, cooking, and as nurses.

The health of the prisoners has been good. Only three deaths have occurred since the last visit of the committee.

The prison is kept clean and comfortable. Only one prisoner occupies a cell at one time. Good discipline is maintained.

Solitary confinement and deprivation of beds are the punishments inflicted.

The inconvenience and danger from the number of prisoners being greater than the number of cells still continues. At present all of the females, and about thirty of the males, are confined in dormitories fitted up in the work-shops.

Early last autumn a school was opened in one of the work-shops, and from forty to fifty of the unemployed male prisoners have attended.

All the provisions of law have been complied with as far as circumstances would permit.

LUNATIC HOSPITAL.

The Committee visited the Lunatic Hospital at South Boston, on the twenty-third day of December, 1874. — The number of patients at the date of the last inspection, July 15, 1874, was, —

Of men	105	
Women	96	
		201

Admitted since, —

Men	13	
Women	9	
		22

Whole number under care during the term		223
---	-------	-----

Discharged since, —

Men	13	
Women	7	
		20
		203

Remaining, December 23, 1874, —

Men	105	
Women	98	
		203

Of the twenty discharged, —

Recovered	6	
Much improved	1	
Improved	1	
Unimproved	4	
Not insane	1	
Died	7	
		20

Of the seven deaths, there were from general paralysis, 3; disease of the heart, 1; disease of the brain, 1; consumption, 1; old age (91), 1.

The general health of the inmates, during the term, has been remarkably good, and there has been neither suicide nor accident.

All of the means for employment, recreation and amusement have been fully employed, and with the customary success.

It is believed that the requirements of law, in all matters pertaining to the care and well-being of the inmates, are fully observed, so far as the defective and faulty construction of the buildings renders possible.

JAIL.

The Suffolk County Jail was inspected on the 23d December, 1874. The number of prisoners at that time was 163. The total number committed since July 15, 1874 (the date of the previous inspection), was 1,289. The health of the prisoners has been good. The building is kept clean and well ventilated. Proper discipline is maintained. All the requirements of law appear to have been complied with.

HOUSE OF INDUSTRY AND HOUSE OF REFORMATION.

The Committee visited the Institutions at Deer Island on the 29th of December.

The number remaining in the House of Industry,

July 22d, 1874 (the date of the previous inspection), was 732

Number committed from July 23d to December

28th inclusive 3,648

4,380

Number discharged, from July 23d to December

28th inclusive 3,455

Number remaining December 28th, 1874 . . . 925

The discharges from the House of Industry have been as follows : —

Expiration of sentence	2,626
Payment of fines and costs	645
Pardoned by Directors	100
“ “ Court	69
“ “ Governor	2
Died	8
Sent to Insane Asylum	4
Escaped	1
Total	3455

The commitments were for the following causes : —

Drunkenness	2,962
Larceny	165
Common drunkards	129
Assault and battery	127
Vagabonds	79
Idle and disorderly	55
Fornication	33
Common night-walkers	32
Disturbing the peace	19
Maliciously breaking glass	15
Obtaining property by false pretensions	4
Common beggar	3
Unlawful bathing	3
Violating health ordinances	2
Keeping house of ill-fame	2
Assault on an officer	2
Malicious mischief	2
Keeping unlicensed dog	2
Malicious injury to property	2

Throwing stones in the street ; Indecent exposure of the person ; Being present at a game of cards on

the Lord's day ; Cruelty to animals ; Violating the liquor law ; Intent to defraud ; Playing hand-organ without license ; Common railer and brawler ; Lewd and lascivious, and stubborn child, — one each .	10
Total	<u>3,648</u>

The male prisoners have been employed as carpenters, blacksmiths, coopers, painters, shoemakers, taking care of barns, piggery, etc., and various kinds of labor about the premises. The females have been employed in making clothing, and in knitting, washing, ironing, mending, scrubbing, etc. Solitary confinement is the method of punishment. But one prisoner occupies a cell. At this date there are four hundred more male prisoners than there are cells in the male prison, and sleeping accommodations are furnished for them in the halls and dormitories. There is an imperative necessity for additional accommodations. The discipline is good. The house is kept clean and well ventilated.

The number remaining in the House of Reformation, July 22, 1874, was	315
Number committed from July 23 to December 28 inclusive	<u>118</u>
	433
Number discharged from July 23 to Dec. 28 inclusive	<u>131</u>
Number remaining Dec. 28, 1874	302

The offences for which they were committed are as follows :—

Larceny	43
Habitual truants	26
Juvenile vagrants	22

Stubbornness and disobedience	14
Assault and battery	6
Breaking and entering, and larceny	3
Receiving stolen property	1
Trespass with intent to steal	1
Malicious mischief	1
Drunkenness	1
Total	118

The discharges were for, —

Expiration of sentence	84
Pardoned by Directors	46
Died	1
Total	131

From the date of the last inspection till the first of November a portion of the boys were employed on the farm and in other outside labor, and the others attended school. Since that date all have attended school.

The girls attend school all of the time, and are also taught various branches of housework.

Feruling and deprivation of privileges are the modes of punishment.

At the present time the boys are allowed to associate together, — the oldest and most hardened with the youngest and most innocent. Their ages range from eight years up to twenty years. The Committee are of opinion that measures should be taken to classify and separate these boys, either according to their ages or their mental and moral conditions. Under the present arrangements the younger boys, who might be reformed if placed under good influences, are hopelessly corrupted by those who are older and more vicious.

Respectfully submitted.

For the Committee,

LEONARD R. CUTTER,

Chairman.

City Document. — No. 114.

CITY OF BOSTON.



R E P O R T

OF THE

CITY SOLICITOR

TO

DECEMBER 31, 1874.

IN BOARD OF ALDERMEN, Dec. 31, 1874.

Laid on the table and ordered to be printed.

Attest:

S. F. McCLEARY,

City Clerk.

CITY OF BOSTON.

CITY SOLICITOR'S OFFICE,

BOSTON, December 31, 1874.

To the Honorable the City Council: —

The undersigned respectfully submits the following report of all the suits and legal proceedings to which the City of Boston is party, pending at the time of his last report, or since instituted, with a statement of the causes of action, the Courts wherein the several cases are pending, and the action that has been had in them respectively.

Names of Parties.	Date of Process.	Court.	Cause of Action.
George Peabody <i>vs.</i> City of Boston.	1855.	Sup. Jud.	To vacate the discontinuance of Foster street.
Boston & Worcester R. R. Company <i>vs.</i> Same.	Do.	Do.	To vacate the discontinuance of Kneeland street.
Same <i>vs.</i> Same.	Do.	Do.	Do.
Charles P. Bent <i>vs.</i> Same.	1862.	Do. Middlesex.	Alleged trespass in digging and carrying away earth from certain streets in South Boston.
City of Roxbury <i>vs.</i> Rogers.	1867.	Superior. Norfolk.	To recover for abating a nuisance.
Martha W. Lufkin <i>vs.</i> City of Boston.	1868.	Sup. Jud. Suffolk.	Injury in street.
Edmund O'Malley <i>vs.</i> Same.	May, 1869.	Do.	Do.
George Gardner, Pet'r, <i>vs.</i> Same.	Oct., 1869.	Superior.	Extension of Avon street.

Remarks.	Result.
This action was brought to test the validity of the original laying out of streets in South Boston.	
Verdict for defendant.	
Removed from Superior Court. April T., 1871. Verdict for defendant. Plaintiff filed exceptions which are still pending.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
George Gardner, Pet'r, <i>vs.</i> City of Boston.	Oct., 1869.	Superior.	For revision of betterment assessed for extension of Avon street.
Proprietors India Wharf, Petitioner, <i>vs.</i> Same.	Do.	Do.	Laying out Atlantic avenue.
Proprietors T Wharf, Petitioners, <i>vs.</i> Same.	Jan. T., 1870.	Do.	Do.
Henry Barrett <i>et al.</i> , Pet'rs, <i>vs.</i> Same.	Do.	Do.	Widening Hanover street.
Nathaniel Whiting, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Fort Hill.
Boston Seamen's Friend Society, Pet'rs, <i>vs.</i> Same.	July, 1870.	Do.	Widening Purchase street.
Susan B. Reynolds, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Fort Hill.
Catherine Sullivan, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
Argued to the Supreme Court.	
Jan. T., 1874. Partial settlement acknowledged.	
Oct., 1870. Referred.	
Settled by Committee on Streets.	July T., 1874. Dismissed without costs.
Reported to Supreme Court. Oct., 1874. Decision of the Supreme Court, and case remitted for trial.	
	Feb., 1874. Dismissed.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Alpheus Hardy <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	July, 1870.	Superior.	No service of this petition ever made on the city.
Nathaniel C. Nash, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Samuel J. Noble, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Eliot street.
Daniel Loy <i>vs.</i> Same.	Do.	Sup. Jud.,	Injury while employed in blasting for the city.
Jeremi'h Donavan and Wife <i>vs.</i> Same.	Oct., 1870.	Do.	Injury in street.
Nathaniel Whiting, Pet'r, <i>vs.</i> Same.	Do.	Superior.	Grading Fort Hill.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Adeline M. Whiting, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
Wm. Sohler made a party. Reported to Supreme Court. Report discharged. Jan. T., 1874. Verdict for plaintiffs. Sohler, \$16,972.10; for Noble, \$1,605.40. Noble moves for a new trial. Motion pending.	
Removed from Superior Court. Facts to be agreed.	
Settled by Committee on streets.	July T., 1874. Dismissed.
Do.	Do.
Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Adeline M. Whiting, Pet'r, <i>vs.</i> City of Boston.	Oct. 1870.	Superior.	Grading Fort Hill.
George T. Adams, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Hanover st.
Associa'n Relief of Ancient and Indigent Females, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
John Stearns, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for widening Oliver st.
Wm. H. Milton, Pet'r, <i>vs.</i> Same	Do.	Do.	Laying out a street from Guild Row to Warren st.
Abner Phelps, <i>et al.</i> , Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment assessed for widening Oliver street.
Chas. H. Phelps, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Isaac Sweetser, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
Settled by Committee on Streets.	July T., 1874. Dismissed.
Consolidated with petition of Association Relief of Ancient and Indigent Females, below.	Do.
	Oct. T., 1874. Judgment by agreement. For Petrs. Dam. \$10,000 For Geo. T. Adams, 1,700 \$11,700 Ex'on Nov. 23.
Jan., 1874. Referred.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Maurice O'Connell, Pet'r, <i>vs.</i> City of Boston.	Oct. 1870.	Superior.	For reduction of betterment assessed for widening Oliver street.
Same, Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Oliver street.
Same, Petitioner, <i>vs.</i> Same.	Do.	Sup. Jud.	For injunction against collection of betterment for Oliver street widening.
Same, Petitioner, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment for Oliver street widening.
John Stearns, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
Same <i>vs.</i> Same.	Do.	Do.	To enjoin collection of betterment for widening Oliver street.
Isaac Sweetser, Pet'r, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment for widening Oliver street.
Mary E. Shute, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
	Dismissed.
	Do.
	Dismissed.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Boston Seamen's Friend Society, <i>vs.</i> City of Boston.	Oct. 1870.	Sup. Jud.	To enjoin collection of betterment for widening Oliver street.
Proprietors India Wharf, Petitioners, <i>vs.</i> Same.	Jan. 1871.	Superior.	For reduction of betterment for Atlantic avenue laying out.
Proprietors Long Wharf, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
John H. Fisher, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Wm. Minot, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Hanover street.
Jacob Bancroft, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for widening Hanover street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
B. F. Edmands, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
	Settled and betterment paid.
	Do.
	Settled and disposed of.
April, 1873. Jury assess benefit at \$6,465, and adjudge to the city one-third of that amount. Exceptions taken by defendant and sustained, and a new trial ordered.	Settled and disposed of. \$4,000 betterment to be paid by the petitioner.
	Oct. T., 1874. Settled by agreement. Petitioner paying \$1,200 for betterments without interest or costs.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Commercial Wharf Co., Petitioners, <i>vs.</i> City of Boston.	Jan. 1871.	Superior.	For reduction of betterment for laying out Atlantic avenue.
Moses B. Wildes, <i>et al.</i> , petitioners, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for widening Hanover street.
Patrick McDonald, Pet'r, <i>vs.</i> Same.	April, 1871.	Do.	Grading Fort Hill.
Sarah J. Melledge, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Atlantic avenue.
City of Boston <i>vs.</i> Roger Drury.	Do.	Do.	For ashes and loam delivered.
Proprietors T. Wharf, Petitioners, <i>vs.</i> City of Boston.	July, 1871.	Do.	For reduction of betterment on Atlantic avenue.
Margaret Wooley, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Abram F. Block, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Eliot street.

Remarks.	Result.
Mason made a party.	July T., 1874. Dismissed.
	Oct. T., 1874. Judgment for plaintiff by agreement, for \$27.50.
Jan., 1874. Partial settlement acknowledged.	
Oct. T., 1874. Settled. Petitioner to pay \$1,700, betterment, no interest or costs, by agreement.	
April T., 1873. Jury assessed petitioner's betterment at \$4,300. Amount to be paid by the petitioner to be assessed by the Court.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Moses B. Wildes, Pet'r, <i>vs.</i> City of Boston.	Sept., 1871.	Sup. Jud.	For certiorari to vacate assessment of betterment for widening Hanover street.
Shawmut Cong. Church, Petitioners, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment for widening Tremont street.
Eighth Cong. Church, Petitioners, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment on Tremont street.
Children's Mission to Chil- dren of Destitute, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.
Same <i>vs.</i> Same.	Do.	Do.	Do.
Mary A. Harriman <i>vs.</i> Same.	Do.	Do.	Injury in street.
Model Lodging House Association <i>vs.</i> Same.	Do.	Do.	Taking Suffolk street Dis- trict.
Mercantile Wharf Co., Petitioners, <i>vs.</i> Same.	Oct., 1871.	Superior.	For reduction of better- ment on Atlantic avenue.

Remarks.	Result.
Removed from Superior Court.	
This case is disposed of, except the petition of Rebecca C. Billings.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
William H. Milton, Pet'r, <i>vs.</i> City of Boston.	Oct. 1871.	Superior.	Widening Ziegler street.
Thomas J. Dunbar <i>vs.</i> Same.	Do.	Do.	To recover taxes paid under protest.
Charles Roberts, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Chambers and Green streets.
Eliza C. Brown, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Atlantic avenue.
William H. Milton, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Ziegler street.
Josiah Quincy <i>et al.</i> , Petr's, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Atlantic avenue.
Edward Blake, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Hanover street.
Charles D. Bickford, Pet'r, <i>vs.</i> Same.	Jan. 1872.	Do.	Obstructing Stony brook.

Remarks.	Result.
Jan., 1874. Referred.	
Heard and reported to Supreme Court on plain- tiff's exceptions.	Oct. T., 1874. Exceptions overruled, and judg- ment for defendant.
	Settled by Committee on Streets.
Jan., 1874. Referred.	
Jan., 1873. Referred.	
	July T., 1874. Dismissed.

Names of Parties.	Date of Process.	Court.	Cause of Action.
William A. Prescott, Pet'r, <i>vs.</i> City of Boston.	Jan. 1872.	Superior.	For reduction of betterment on Hanover street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Richmond street.
Trs. Perman't Peace Fund, Petitioners, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Kingston street.
Trustees First Methodist Episcopal Church, Pet'rs., <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Hanover street.
Nathaniel C. Nash, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Purchase street.
G. F. Burckhardt <i>vs.</i> Same.	April, 1872.	Sup. Jud.	Grading Prentiss and Halleck streets.
Stephen B. Simons, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	Alleged breach of contract to manufacture plaintiff's goods at House of Correction.
Geo. F. Hawley, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
	Oct. T., 1874. Judgment for defendant for \$1,500 betterment; no costs.
	Oct. T., 1874. Judgment for defendant for \$300; no costs.
A. Hardy <i>et al.</i> Trs. made parties April, 1873. Referred Jan., 1874. Referee's award: that as a matter of law petitioners are not entitled to recover damages. Petitioners excepted. Exceptions sustained by S. J. Court, and case remitted for trial on its merits.	
Removed from Superior Court.	
Do.	
Do.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> E. A. Knowlton.	April, 1872.	Sup. Jud.	For injunction against violation of the Building Act.
Delano March, <i>et al.</i> , <i>vs.</i> City of Boston.	Do.	Superior.	Alleged breach of contract to manufacture plaintiff's goods at House of Correction.
Boston Baptist Bethel, Petitioner, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Hanover street.
William Minot, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Kingston street.
Elizabeth Leonard, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Prentiss and Halleck streets.
Edward Blake, Pet'r, <i>vs.</i> Same.	July, 1872.	Do.	For revision of betterment for removal of Scollay's building.
Louis Hepinenze <i>vs.</i> Same.	Do.	Do.	Injury in street.
Aug. F. Lang <i>vs.</i> Same.	Do.	Do.	Damage to plaintiff's land by obstruction of a drain.

Remarks.	Result.
Injunction issued.	
Sent to an auditor.	
Referred.	
Jan. T., 1873. Tried. Jury disagreed. April T., 1873. Verdict for defend- ant. Reported on plffs.' exceptions to full Court.	
April T., 1873. Tried. Verdict for def't. Plaintiff excepted. Exceptions sus- tained and new trial or- dered.	
Oct. T., 1874. Tried, and jury disagreed.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Edwin Wright <i>vs.</i> City of Boston.	Sept. 1872.	Sup. Jud.	Alleged breach of contract to employ plaintiff to arrange the Probate records.
Elizabeth Kendall <i>vs.</i> Same.	Do.	Do.	Injury by fall of a bust in Music Hall.
Same <i>vs.</i> Chas. E. Jenkins, <i>et al.</i>	Do.	Do.	Do.
Mary Murphy <i>vs.</i> City of Boston.	Do.	Do.	Injury in street.
A. J. Kilbourne, Pet'r, <i>vs.</i> Same.	Do.	Superior. Middlesex.	Widening Washington av. and Malden street, in Chelsea.
I. Otto S. Cuntz, Pet'r, <i>vs.</i> Same.	Oct. 1872.	Do. Suffolk.	For reduction of betterment on Kingston street.
Lucy H. Spooner, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Columbus avenue.
George Wilson <i>vs.</i> Same.	Do.	Sup. Jud.	Injury in street.

Remarks.	Result.
Referred to H. W. Paine.	Dec., 1874. Judgment for plaintiff, on referee's award.
Nov., 1874. Heard by referee.	Damages, \$12,000 Costs, 357
	<u>\$12,357</u> Ex'on Dec. 10, .25
April T., 1871. Verdict for defendant. Case reported to full Court on plaintiff's exceptions.	
Do. Defendants were a Committee of the City Government upon a celebration at Music Hall.	
Verdict for defendant. Reported to full Court on questions of law.	
Sept. T., 1873. Tried before Sheriff's Jury, who assessed damages. Defendant excepted. Exceptions pending.	
Removed from Superior Court. April T., 1874. Tried. Verdict for plaintiff. Reported to full Court on questions of law.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
James Teevan, Pet'r, <i>vs.</i> City of Boston.	Oct., 1872.	Superior.	Discontinuance of Church street.
Elizabeth L. Francis, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Columbus avenue.
Jeffrey Richardson, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
B. F. Brooks, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Kingston street.
Michael Connolly <i>vs.</i> Same.	Do.	Do.	Injury by falling from Dover street bridge draw.
David Cobb <i>vs.</i> Same.	Do.	Do.	For work and materials furnished on Church-street District.
Asahel A. Smith and Wife <i>vs.</i> Same.	Do.	Do.	Do.
William P. Hunt <i>vs.</i> Same.	Do.	Do.	Alleged disseizin, by defendant, of plaintiff of land on Federal street.

Remarks.	Result.
Settled and to be dismissed.	
Oct., 1874. Referred.	
April T., 1874. Tried. Verdict for defendant. Plaintiff took exceptions, which are pending.	
Sent to an auditor, who reported April T., 1874. Plaintiff moved for a re-committal or amendment to report. Oct., 1874. Re-committed.	
Do.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
John Duncan and Wife <i>vs.</i> City of Boston.	Oct., 1872.	Sup. Jud.	Injury in street.
Charles H. Taylor <i>vs.</i> Same.	Jan., 1873.	Do.	For destruction of Merchants' building with gunpowder.
Willard Manuel, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	For breach of contract for work on Suffolk street District.
Fanny Bonner <i>vs.</i> Same.	Do.	Do.	Injury in street.
John S. Laming, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	To prevent use of Pine Island for a small-pox hospital.
City of Boston <i>vs.</i> Charles Blake.	Do.	Do.	For an injunction under the Building Act.
Geo. W. Phillips, Pet'r, <i>vs.</i> City of Boston.	Do.	Superior.	For reduction of betterment for extension of Shawmut avenue.
Edwin M. Bigelow, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
Removed from Superior Court.	
Sent to an auditor.	
	July T., 1874. Judgment on verdict for plaintiff. For damages, \$4,040 00 Costs, 63 02 \$4,103 02 Ex'on July 30, 25
Injunction issued.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Franklin King, Pet'r, <i>vs.</i> City of Boston.	Jan., 1873.	Superior.	For reduction of betterment for extension of Purchase street.
Lewis D. Boise, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Devonshire street.
Joseph Ballister, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Cottage street.
Lewis N. Spaulding <i>vs.</i> Same.	April, 1873.	Sup. Jud.	To cancel a deed for alleged breach of condition.
City of Boston <i>vs.</i> Julius Hincke.	Do.	Do.	For injunction against violation of the Building Act.
Same <i>vs.</i> Susan R. Eldridge.	Do.	Do.	Do.
Same <i>vs.</i> Horace Quigley, <i>et al.</i>	Do.	Do.	Do.
Same <i>vs.</i> Albert Brown.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> Thomas Minns.	April, 1873.	Sup. Jud.	For injunction against violation of the Building Act.
Same <i>vs.</i> George A. Mudge, <i>et al.</i>	Do.	Do.	Do.
Same <i>vs.</i> David H. Jacobs, <i>et al.</i>	Do.	Do.	Do.
Julia A. Gould <i>vs.</i> City of Boston.	Do.	Do.	Injury in street.
Margaret Whelan, Adm'r, <i>vs.</i> Same.	Do.	Do.	Do.
Marie A. Leyon <i>vs.</i> Same.	Do.	Do.	Do.
Maurice O'Connell, Pet'r, <i>vs.</i> Same.	Do.	Superior.	For reduction of betterment on Sturgis street.
Moses Williams, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Washington st.

Remarks.	Result.
Defendant complied with the requirements of the act.	
Injunction issued.	
Removed from Superior Court.	
Do.	
Do.	
Settled.	Oct., 1874. Dismissed.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Benj. F. White, Pet'r, <i>vs.</i> City of Boston.	April, 1873.	Superior.	Extension of Oliver street.
Cornelius Ryan and Wife, Petitioners, <i>vs.</i> Same.	Do.	Do.	Grading Ontario street.
Wm. Minot, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Federal street,
Arthur N. Whiting, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for widening Sturgis street.
Same, <i>et al.</i> , Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for widening Purchase street.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do. for widening and grading Hamilton street.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do. for grading Washington square.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
Oct. T., 1874. Trial and verdict for defendant. Exceptions taken by plaintiffs.	
Settled by Committee on Streets.	July T., 1874. Dismissed without costs. Bet- terment assessed paid by the petitioner.
Do.	Do.
Do.	Do.
Do.	Do.
Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Arthur N. Whiting, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	April, 1873.	Superior.	For reduction of betterment for grading Washington square.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Shawmut National Bank, Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Congress street.
Jos'ph K. Melcher and Wife, <i>vs.</i> Same.	July, 1873.	Do.	Sending female plaintiff to small-pox hospital without cause.
J. W. Converse, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for laying out Atlantic avenue.

Remarks.	Result.
Settled by Committee on Streets.	July T., 1874. Dismissed without costs. Bet- terment assessed paid by the petitioner.
Do.	Do.
Do.	Do.
Do.	Do.
Do.	Do.
Do.	Do.
Plaintiffs are lessees. Geo. D. Howe <i>et al.</i> owners, and William F. Lawrence, sub-lessee, made parties. Heard and reported to Supreme Court to determine the rights of the lessees to maintain their action.	
	Oct. T., 1874. Plaintiffs non-suited.

Names of Parties.	Date of Process.	Court.	Cause of Action.
John Roessle, Pet'r, <i>vs.</i> City of Boston.	July, 1873.	Superior.	Widening Pynchon st.
Children's Mission to Children of Destitute, Pet'rs, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for extension of Shawmut avenue.
Elizabeth Taylor, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Pearl street.
Edward W. Bradley, <i>vs.</i> Same.	Aug., 1873.	U. S. Circuit Court.	Alleged undermining of plaintiff's wharf by dredging Roxbury canal.
James M. Cutter, <i>et al.</i> , <i>vs.</i> Same.	Do.	Sup. Jud.	Destruction of building by gunpowder in fire of November, 1872.
Emma H. Crosby <i>vs.</i> Same.	Do.	Do.	Injury in street.
Charles V. Caples <i>vs.</i> Same.	Do.	Do.	Do.
Children's Mission to Children of Destitute, Pet'rs, <i>vs.</i> Same.	Do.	Do.	For certiorari to vacate assessment of betterment for extension of Shawmut ave.

Remarks.	Result.
	July T., 1874. Dismissed.
C. C. Walworth & Co., lessees, made parties.	April T., 1874. Trial. Verdict for petitioners. For Taylor, Damages, \$61,102 74 Costs, 117 25 \$61,219 99 Ex'on July 16, .25 For Walworth & Co., Dam., \$6,763 35 Costs, 27 70 \$6,791 05 Ex'on July 13, .25
	November, 1874. Trial and verdict for the defendant.
April T., 1874. Tried. Verdict for defendant. Exceptions taken by plaintiff pending.	
Removed from Superior Court. Commenced in January, 1870.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> Metropolitan Horse R. R. Company.	Aug. 1873.	Sup. Jud.	To recover damages paid by city on judgment against it on suit by Thomas M. Prentiss for injury on defendant's track.
Robert Johnson <i>vs.</i> City of Boston.	Do.	Do.	Injury by caving in of a sewer on Warren street.
City of Boston. <i>vs.</i> Robert T. Paine, Jr.	Do.	Do.	For injunction under the Building Act.
Same <i>vs.</i> Horace R. Quigley, <i>et al.</i>	Do.	Do.	Do.
W. E. Woodward, Pet'r, <i>vs.</i> City of Boston.	Oct. 1873.	Superior.	For reduction of betterment for extension of Harrison avenue.
John McKenna, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Washington street.
Chas. A. Neuert <i>vs.</i> Same.	Do.	Do.	Injury in street by a telegraph wire.
Asa F. Cochran <i>vs.</i> Same.	Do.	Sup. Jud. Middlesex.	To recover taxes paid under protest.

Remarks.	Result.
Removed from Superior Court. Reported to full Court on agreed statement of facts.	
	Injunction granted and made perpetual.
	Injunction granted.
Administrator of Martin McKenna, and Jacob Bock joined as parties.	
Oct. T., 1874. Verdict for plaintiff for \$2,500. Exceptions taken by defendant and pending.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Thos. J. Dunbar <i>vs.</i> Fred'k U. Tracy, Treas.	Oct. 1873.	Superior. Suffolk.	To recover taxes paid under protest.
Same <i>vs.</i> Francis V. Bulfinch.	Do.	Do.	Do.
Same <i>vs.</i> Same.	Do.	Do.	Alleged false imprisonment on a warrant for collection of taxes.
A. J. C. Sowdon, Pet'r, <i>vs.</i> City of Boston.	Do.	Do.	Extension of Washington street.
Daniel Lee, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Sar'h L. Cunningham, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Extension of Federal st.
Same <i>vs.</i> Same.	Do.	Do.	Widening Milk street.
Edward McGuckian, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Halleck street.

Remarks.	Result.
Settled and disposed of.	
Do.	
Do.	Oct. T., 1874. Dismissed.
Settled.	Do.
Dec., 1874. Judgment for petitioner. Damages, \$573 25 Costs, 159 73 \$732 98 Ex'on Dec. 8, 25	

Names of Parties.	Date of Process.	Court.	Cause of Action.
B. F. Brooks <i>et al.</i> , Pet'rs, <i>vs.</i> City of Boston.	Oct. 1873.	Superior.	Extension of Arch street.
John C. Howe <i>et al.</i> , Pet'rs, <i>vs.</i> Same.	Do.	Do.	Extension of Pearl street.
William Childs, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Pond street.
Benj. F. Paine, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Washington street.
Edwin M. Montague, Pet'r, <i>vs.</i> Same.	Do.	Do.	For taking land in the Church-street District.
Denis Lyons, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Summer street.
P. J. Lattermoor <i>et al.</i> , <i>vs.</i> Same.	Do.	Municipal.	Preventing plaintiffs from discharging a cargo of coal.
Wamesit Power Co. <i>vs.</i> Same.	Dec. 1873.	Superior. Middlesex.	Taking water from Sudbury river.

Remarks.	Result.
Settled by Committee on Streets.	July T., 1874. Dismissed.
	Oct. T., 1874. Judgment for petitioner. Damages, \$2,463 12 Costs, 153 01 \$2,616 13 Ex'on Dec. 5, 25
Removed to Supreme Court.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Wamesit Power Co. <i>vs.</i> Cochituate Water Board.	Dec. 1873.	Superior. Middlesex.	Taking water from Sudbury river.
John Curtis and Wife <i>vs.</i> City of Boston.	Jan. 1874.	Do. Suffolk.	Injury to house by overflow from a sewer.
Samuel K. Bailey <i>vs.</i> Same.	Do.	Do.	Injury by horse-car track.
City of Boston <i>vs.</i> Jonas B. Hildreth.	Do.	Do.	For ashes and loam sold to defendant.
Wm. Dehon, Pet'r, <i>vs.</i> City of Boston.	Do.	Do.	Widening Congress street.
Larkin Dunton <i>vs.</i> Same.	Do.	Do.	For salary as teacher of Normal School.
Proprietors Liverpool Wharf, Pet'rs, <i>vs.</i> Same.	Do.	Do.	Widening Broad street.
Herman B. Inches, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
Removed to Supreme Court.	
	Oct. T., 1874. Judgment for defendant.
Dec., 1874. Verdict ordered for defendant. Plaintiff excepted.	
	Dec., 1874. Settled and to be disposed of.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Richard Baker, Jr., Pet'r, <i>vs.</i> City of Boston.	Jan. 1874.	Superior. Suffolk.	Widening Federal street.
Same <i>vs.</i> Same.	Do.	Do.	Extension of Franklin st.
Leonard F. Lawrence, Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Water st.
Elizabeth L. Bennett, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for widening Market street, Brighton.
Eliza A. Parkman, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Congress street.
Wm. C. Murdock, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Washington st.
Wm. C. Reeves, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do. corner of Boylston st.
Wm. F. Lawrence, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Congress st.

Remarks.	Result.
	Settled and to be disposed of.
	Do.
R. E. Apthorp joined.	
Settled by Committee on Streets.	July T., 1874. Dismissed.
Holmes, Davenport, Upham, Moore, <i>et al.</i> , and Baer join.	
Merged with petition of Shawmut National Bank.	July T., 1874. Dismissed.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Elizabeth W. Eaton, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	Jan. 1874.	Superior.	Widening Washington st. corner of Boylston.
Edmund Rice, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of better- ment for widening Market street, Brighton.
Almira W. Bennett, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Mary Wigglesworth, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Widening Hawley street.
John M. Way, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of a sewer assessment in Copeland st.
William H. Tobey <i>vs.</i> Same.	Do.	Superior. Plymouth.	Injury to plaintiff's wagon at Neponset bridge.
James Thomson and Wife <i>vs.</i> Same.	Do.	Sup. Jud.	Injury in street.
Wm. Halliday <i>vs.</i> Same.	Do.	Do.	Overflowing plaintiff's land and undermining his house by opening a ditch.

Remarks.	Result.
	Oct. T., 1874. Dismissed.
Settled.	Do.
	June, 1874. Judgment for plaintiff. Damages, \$70 00 Costs, 52 90 \$122 90 Ex'on, July 7, 25
Removed from Superior Court.	
Do.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Eugenie A. Stevens <i>vs.</i> City of Boston.	April, 1874.	Sup. Jud.	Injury in street.
Eugene O'Neil and Wife <i>vs.</i> Same.	Do.	Do.	Do.
John W. Leatherbee <i>vs.</i> Same.	Do.	Do.	No declaration filed.
John McCann <i>vs.</i> Same.	Do.	Do.	Injury on Charlestown bridge.
Jos. A. Harwood, <i>et al.</i> , <i>vs.</i> Same.	Do.	Do.	Destroying building by gunpowder November 10, 1872.
Sarah A. Leavett <i>vs.</i> Same.	Do.	Do.	Injury in street.
Zylpha H. Ayers <i>vs.</i> Same.	Do.	Do.	Do.
City of Boston <i>vs.</i> Christopher Lee.	Do.	Do.	Injunction for violation of the Building Act.

Remarks.	Result.
Sept. T., 1874. Verdict for defendant.	
Removed from Superior Court.	
Do.	
Do.	
	Injunction issued. Defendant complied with requirements of the Act, and Sept. T., 1874, bill dismissed.

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> Maria Hughes.	April, 1874.	Sup. Jud.	Injunction for violation of the Building Act.
Fifty Associates <i>vs.</i> City of Boston.	Do.	Do.	To determine the disposi- tion of funds bequeathed to charitable purposes by the will of David Sears.
Overseers of the Poor <i>vs.</i> Same.	Do.	Do.	Do.
Trs. of Tufts College <i>vs.</i> Same.	Do.	Do.	To determine rights in a certain passageway.
Timothy Gunning <i>vs.</i> Same.	Do.	Superior.	For labor furnished to town of West Roxbury.
Karen Gunning <i>vs.</i> Same.			Do.
Hubert Mee <i>vs.</i> Same.			Do.
John Kelley <i>vs.</i> Same.	Do.	Do.	Do.

Remarks.	Result.
	Injunction issued. Defendant complied with requirements of the Act, and Sept. T., 1874, bill dismissed.
The city has only a remote and contingent interest in this matter.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Patrick Corliss <i>vs.</i> City of Boston.	April, 1874.	Superior.	For labor furnished to town of West Roxbury.
Patrick Condry <i>vs.</i> Same.	Do.	Do.	Do.
Patrick Finnerty <i>vs.</i> Same.	Do.	Do.	Do.
John McDonald <i>vs.</i> Same.	Do.	Do.	Do.
Patrick Oates <i>vs.</i> Same.	Do.	Do.	Do.
Thomas Duffy <i>vs.</i> Same.	Do.	Do.	Do.
William Galvin <i>vs.</i> Same.	Do.	Do.	Do.
Jas. M. Keith, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of sewer assessment.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Trs. Chapel of Good Shepherd <i>vs.</i> City of Boston.	April, 1874.	Superior.	To recover taxes paid under protest.
J. W. Sylvester <i>vs.</i> Same.	Do.	Do.	Services as small-pox nurse.
Catherine H. Faunce <i>vs.</i> Same.	Do.	Do.	Trespass and using plaintiff's land as a public street.
Trinity Church <i>vs.</i> Same.	Do.	Do.	To recover taxes paid under protest.
Cornelius Cronin <i>vs.</i> Same.	Do.	Do.	Grading Havre street.
Harvard College, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Arch street.
George D. Wells, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Cocheco Manuf. Co., Petitioner, <i>vs.</i> Same.	Do.	Do.	Widening Water street.

Remarks.	Result.
Reported to Supreme Judicial Court on agreed statement of facts.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Josiah Quincy, <i>et al.</i> , Petitioners, <i>vs.</i> City of Boston.	April, 1874.	Superior.	Extension of Quincy place.
John P. Treadwell, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment on Kneeland street.
Same, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
City of Boston <i>vs.</i> Cumberland Brown Stone Company.	Do.	Municipal.	Rent of lot of land.
Francis M. Johnson, Pet'r, <i>vs.</i> City of Boston.	Do.	Superior.	Widening Congress street.
Continental Life Ins. Co., Petr's, <i>vs.</i> Same.	Do.	Do.	Widening Water street.
Mary A. Hall, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for South Market street extension.
Mary H. Potter, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Thomas Dana, Pet'r, <i>vs.</i> City of Boston.	April, 1874.	Superior.	For reduction of betterment for South Market street extension.
Wallace F. Robinson, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
David Snow, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Asa Jacobs, <i>et al.</i> , Pet'rs, <i>vs.</i> Same.	Do.	Do.	Do.
Thos. W. Nickerson, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do.
Geo. W. B. Taylor, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Water street.
Aaron C. Baldwin, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Essex street.
Wm. T. Litchfield, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Broad street.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Hiram A. Campbell, Pet'r, <i>vs.</i> City of Boston.	April, 1874.	Superior.	Grading Cabot street.
John Mulligan, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Andrew Gallagher, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
John B. Voisin, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Alvin D. Puffer, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for extension of Devonshire street.
John Codman, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Ivory G. Curtis, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for extension of Columbus avenue.
John B. Regan, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening Essex street.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Lewis & Barrett <i>vs.</i> City of Boston.	April, 1874.	Superior. Norfolk.	For construction of a sewer, and alleged breach of contract in relation thereto.
Alexander G. Bowditch, Assignee in Bankruptcy, <i>vs.</i> Same.	June, 1874.	U. S. Dist. Court.	For destruction of a building by gunpowder in fire of November, 1872.
Michael Geraghty, Pet'r, <i>vs.</i> Same.	July, 1874.	Superior.	For reduction of betterment for laying out Central street, Brighton.
Same, Petitioner, <i>vs.</i> Same.	Do.	Do.	Laying out and grading Central street, Brighton.
City of Boston <i>vs.</i> Nathan Robbins.	Do.	Do.	Writ of Review of a judgment on default.
Same <i>vs.</i> Geo. M. Winslow, <i>et al.</i>	Do.	Do.	To recover a penalty for violation of the Building Act.
Same <i>vs.</i> Jas. Cogswell, <i>et al.</i>	Do.	Do.	Do.
Benj. Anthony, Pet'r, <i>vs.</i> City of Boston.	Do.	Do.	Grading Cabot and Weston streets.

Remarks.	Result.
Defendant excepted to the granting of the writ. Exceptions argued November, 1874, and overruled by the Supreme Court.	
	July T., 1874. Judgment, by agreement, for plaintiff, for \$50 damages, and judgment satisfied.
	Do. for \$100 damages.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Ellen Muldoon, Pet'r, <i>vs.</i> City of Boston.	July, 1874.	Superior.	Grading Cabot and West- ton streets.
Margaret Crosby, Pet'r, <i>vs.</i> Same.	Do.	Do.	Extension of Lagrange st. by town of West Roxbury.
Julia A. Henry, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of better- ment for extension of Dev- onshire street.
Benj. F. Brooks, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
William Childs, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do. for widening Pond street.
Same, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do. for extension of Em- erson street.
Henry W. Paine <i>vs.</i> Same.	Sept. 1874.	Sup. Jud.	To recover for services of Charles Burrill in furnishing soldiers.
Sarah G. Cromarty <i>vs.</i> Same.	Do.	Do.	Injury in street.

Remarks.	Result.
Removed from Superior Court.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Chas. W. Hill, <i>per proch.</i> <i>ami,</i> <i>vs.</i> Same.	Sept. 1874.	Sup. Jud.	Injury in school-house.
Mary J. Woods <i>vs.</i> Same.	Do.	Do.	Injury in street.
Agnes L. King, <i>per proch.</i> <i>ami,</i> <i>vs.</i> Same.	Do.	Do.	Do.
Joseph A. Norris <i>vs.</i> Same.	Do.	Do.	Injury on E. Boston ferry.
City of Boston <i>vs.</i> Chapin, <i>et al.</i>	Do.	Do.	For injunction for violation of the Building Act.
Commonwealth of Massachusetts <i>vs.</i> City of Boston.	Aug. 1874.	Superior. Criminal.	Indictment for maintaining a nuisance near Parker st.
Geo. H. Williams, <i>et al.,</i> <i>vs.</i> Same.	Sept. 1874.	Superior. Norfolk.	Improvement of Stony Brook.
William Elms <i>vs.</i> Same.	Do.	Do.	For services rendered to town of West Roxbury, as road-master.

Remarks.	Result.
Removed from Superior Court.	
Do.	
Do.	
Do.	
	The defendants complied with the law, and suit dismissed.
Settled and damages accepted.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Fred'k Kohlepp and Wife, Petitioners, <i>vs.</i> City of Boston.	Sept. 1874.	Superior. Norfolk.	Improvement of Stony Brook.
Wm. O. Lincoln, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading Green street, W. Roxbury.
Joseph Sias <i>vs.</i> Same.	Do.	Do.	Injury in street to horse and carriage.
N. F. Safford, Pet'r, <i>vs.</i> Same.	Oct. 1874.	Superior. Suffolk.	For reduction of a sewer assessment on Neponset avenue.
P. J. Cunningham, Pet'r, <i>vs.</i> Same.	Do.	Do.	Petition not yet served on city.
Margaret Curley, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Winifred Hamer, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Thomas Good, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Thomas Foy, Pet'r, <i>vs.</i> City of Boston.	Oct. 1874.	Superior.	Petition not yet served on the city.
Hannah Gately, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do.
Old Colony R. R. Co., Petitioners, <i>vs.</i> Same.	Do.	Do.	Laying out Division street.
Jesse Osborne, Pet'r, <i>vs.</i> Same.	Do.	Do.	Petition not yet served on city.
John Kelly <i>vs.</i> Same.	Do.	Do.	Using plaintiff's house for a small-pox hospital.
Young Women's Christian Asso., Pet'r's, <i>vs.</i> Same.	Do.	Do.	Widening Beach street.
Wm. D. Hennessey <i>vs.</i> Same.	Do.	Do.	Injury in street.
City of Boston <i>vs.</i> Dexter Sherman.	Do.	Do.	To recover for support of plaintiff's wife at State Lunatic hospital.

Names of Parties.	Date of Process.	Court.	Cause of Action.
City of Boston <i>vs.</i> Luke Lyons.	Oct. 1874.	Superior.	To recover for support of plaintiff's wife at State Lunatic hospital.
John Good <i>vs.</i> City of Boston.	Do.	Do.	For labor on roads for town of West Roxbury.
John McCormick <i>vs.</i> Same.	Do.	Do.	Do.
Daniel Doyle <i>vs.</i> Same.	Do.	Do.	Do.
Michael Galvin <i>vs.</i> Same.	Do.	Do.	Do.
Wm. Lawler <i>vs.</i> Same.	Do.	Do.	Do.
Michael Lennon <i>vs.</i> Same.	Do.	Do.	Do.
Henry A. Learnard, Pet'r, <i>vs.</i> Same.	Do.	Do.	Petition not yet served on city.

Remarks.	Result.
Commenced in Municipal Court and appealed from a judgment there rendered for plaintiff.	
Do.	
Do.	
Do.	
Do.	
Do. There are 204 of these suits in all, brought in Mun. Court, to recover sums of about \$5 each, for work on roads in West Roxbury. The names of the other plaintiffs are omitted here.	

Names of Parties.	Date of Process.	Court.	Cause of Action.
Samuel S. Learnard, Pet'r, <i>vs.</i> City of Boston.	Oct. 1874.	Superior.	Petition not yet served on city.
Michael Clancy <i>vs.</i> Same.	Do.	Do.	Injury to plaintiff's house by a mob.
City of Boston <i>vs.</i> Edward Gallagher.	Do.	Sup. Jud.	Injunction for violation of the Building Act.
George Evans <i>vs.</i> City of Boston.	Do.	Sup. Jud. Middlesex.	Injury in street.
Town of Plymouth <i>vs.</i> Same.	Do.	Superior. Plymouth.	For support of a pauper alleged to have a settlement in Boston.
Clark B. Wood, <i>et al.</i> , Petitioners, <i>vs.</i> Fred'k W. Lincoln, <i>et al.</i> , Commissioners.	Do.	Superior. Suffolk.	Widening Craigie's bridge.
Wm. B. Fowle, Pet'r, <i>vs.</i> City of Boston.	Do.	Do.	Widening Water street.
Thomas Coughlan, Pet'r, <i>vs.</i> Same.	Do.	Do.	Grading F street.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Amos Bates, Pet'r, <i>vs.</i> City of Boston.	Oct. 1874.	Sup. Jud. Suffolk.	Laying sewer between Dudley and Quincy streets.
Chas. Davenport, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for extension of Devonshire street.
Same, Petitioner, <i>vs.</i> Same.	Do.	Do.	Do. for extension of Washington street.
Joseph Ballister, Pet'r, <i>vs.</i> Same.	Do.	Superior.	Reduction of betterment for widening Cottage street.
William Gray, Jr., Pet'r, <i>vs.</i> Same.	Do.	Do.	Improvement of Dorchester-brook sewer.
A. J. Wilkinson, Pet'r, <i>vs.</i> Same.	Do.	Do.	Reduction of betterment for extension of Washington street.
Robert O. Treadwell, Pet'r, <i>vs.</i> Same.	Do.	Do.	Do. for extension of Devonshire street.
Sarah A. Weilhard, Pet'r, <i>vs.</i> Same.	Do.	Do.	Widening South street.

Names of Parties.	Date of Process.	Court.	Cause of Action.
Mary E. Murphy, Pet'r, <i>vs.</i> City of Boston.	Oct. 1874.	Superior.	Grading Silver street.
Chas. W. Galloupe, Pet'r, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for extension of Devonshire street.
° Albert H. Kelsey, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Same, Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Chas. S. Haley, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	Do.
Rob't O. Treadwell, <i>et al.</i> , Petitioners, <i>vs.</i> Same.	Do.	Do.	For reduction of betterment for extension of Washington street.
James M. Keith <i>vs.</i> Same.	Nov. 1874.	Sup. Jud.	For an injunction against sale of land for collection of a sewer assessment.
Mary J. Hill <i>vs.</i> Same.	Dec. 1874.	Superior. Essex.	Injury in street to horse and carriage.

Remarks.	Result.
Temporary injunction granted.	

City Document. — No. 115.

CITY OF BOSTON.



FINAL PROCEEDINGS
OF THE
BOARD OF ALDERMEN,
AT THEIR
LAST MEETING.

JANUARY 2, 1875.

CITY OF BOSTON.

IN BOARD OF ALDERMEN, Jan. 2, 1875.

AFTER the business of the Board had been accomplished, the following resolve was submitted by Alderman EMERY: —

Resolved, That the thanks of the Board of Aldermen be presented to his Honor the Mayor for the uniform courtesy, impartiality and dignity which he has shown in presiding over its deliberations and in his official intercourse with the members; and that we tender him our congratulations upon the successful administration of the municipal government during the past year.

Alderman EMERY, in support of the resolution, said: —

I offer this resolution, not because of its being the usual custom, but because it is appropriate, and the statements therein true to the letter. My first acquaintance with his Honor the Mayor was formed here, and I can truly say that that acquaintance has been most agreeable to me, and has ripened, I trust, into a true friendship, to be as lasting as life. Of his official acts I need not say one word. Our actions here have so far met his approval as not to call forth from him the veto to any of our proceedings. And I must congratulate the members here who have been re-elected another term, that they are to have the same firm and agreeable gentleman to preside over their deliberations from time to time the ensuing year.

The resolution was adopted unanimously by a rising vote, and having been transmitted to the Mayor, His Honor appeared, took the Chair, and addressed the Board as follows:—

GENTLEMEN, — The sentiments expressed by the resolution you have just passed are in accord with the constant courtesy and friendly consideration that I have received at your hands during the time I have had the honor to be associated with you.

While I am fully conscious of my own shortcomings, I cannot overlook the kindness that has prompted this last official act of yours. Accept, therefore, my thanks for this renewed expression of your good will, and let me assure you that I shall always look back with genuine satisfaction upon the pleasant intercourse I have had with you during these twelve months of official labor. Your labors have been continuous and onerous; but they have been cheerfully rendered, and I am glad to bear this public testimony to the ability, the zeal, and the fidelity with which you have discharged them. The enlargement of the city by annexation and by its natural growth has brought a corresponding increase to the labors of all who are connected with the administration of its concerns, so that it has become almost impossible properly to manage the affairs of this metropolis under the existing system. It is to be hoped, however, that a new Charter will soon be adopted, under which I am confident our municipal affairs will be more efficiently and more economically conducted than can be done under the present system, and the labors of the members of the City Council will be at the same time materially lessened.

The record of our year's doings is made up; and if we shall retire with our self-respect preserved, and with a consciousness of labors performed uprightly and according to the best of our ability, as I firmly believe we shall do, we need not be anxious about the judgment passed upon us by our constituents.

I cannot permit the present occasion to pass without expressing my sense of the great obligations I am under to the City Clerk, the Clerk of Committees, and to the several heads of departments, for the valuable aid and counsel which they have in the kindest

manner accorded to me up to the present moment. The people of Boston are fortunate in having such competent agents to carry into effect the orders of the City Council.

And now, gentlemen, in conclusion, let me indulge the hope that the friendships that have been formed in this place may not terminate with our official separation, but rather be cultivated and ripened in the days that are before us, and be continued to the end; and may Heaven's choicest blessings rest now and always upon each one of you.

Alderman CUTTER then submitted the following resolution:—

Resolved, That the thanks of this Board are due, and they are hereby tendered, to JOHN T. CLARK, Esq., for his constant attendance at its meetings, and for the deep interest he has manifested in the important transactions of the Board, and also for the patience and forbearance in which, as Chairman, he has guided the deliberations of his associates during the past year.

Alderman CUTTER, in support of the resolution, spoke as follows:—

I do not know, sir, that I can add anything to the language of the resolution that will make it any more in unison with the feelings of my own heart or the hearts of my associates. I think every one will agree with me in the indorsement of that resolution. Having been Chairman of the Board, I am familiar with the duties of the arduous position. None except those who have performed those duties know how arduous they are. I do not know of a position in any legislative body in this country which equals the duties of the Chairman of this Board of Aldermen. I take particular pleasure, Mr. Mayor, in having the opportunity to render my testimony—which has been fully confirmed by experience—to the honesty and integrity of our Chairman. Our meetings have been lengthy, and we have done our duty. No Board of Aldermen, in my judgment, has done any more duty

towards the subjects presented here than we have. We, perhaps, may have been called the debating Board of Aldermen. Every subject has been thoroughly ventilated, and we have expressed and interchanged our ideas with one another; and while people, who are perhaps not familiar with the duties of the Board, may think we discuss subjects longer and more than is necessary, in my judgment, the more we discuss them the better we are acquainted with, and more competent to vote upon, them. We have had an unusual latitude in debate, through the forbearance of our Chairman, which, in my judgment, has resulted in good to the City of Boston. Mr. Mayor, at this close of my service in this City Hall, I feel sad, — although I experience a sense of joy to know that I am no longer bound to come here day after day, as I have done the last four years. Yet I feel pleased to know that the duties are left upon the shoulders of men who have been elected here for the coming year, whom we can rely upon. In my judgment those duties will be well performed. This, sir, is the close of the fourth year of my connection with this City Hall. The present Chairman has been associated with me the past three years, and I have found him a social companion, and a good man to fill the position of Alderman; and I rejoice that he has been elected for the year to come.

The resolution was unanimously adopted by a rising vote.

THE CHAIRMAN'S ADDRESS.

Alderman CLARK resumed the chair and said: —

Gentlemen of the Board of Aldermen, — The close of our official year is at hand, and the labors of the City Council of 1874 will soon be at an end. Before our final adjournment, I wish to acknowledge and return my sincere thanks to every member of this Board for the uniform kindness and courtesy which have been accorded to me as its presiding officer.

In accepting the position to which you kindly elected me, I did so reluctantly, distrusting my fitness for it; and now, at the close of my term of office, I feel that whatever measure of success has

attended my administration of its duties, is to be credited to the assistance I have always received at your hands. The forbearance you have ever shown has made the position one of instruction and pleasure. I desire also to express the great obligations under which I rest, to our faithful City Clerk for his invaluable assistance, which has always been so promptly and cheerfully rendered. Thoroughly conversant as he is with everything connected with this branch of the city government, it is a pleasure to bear witness to the alacrity with which he always responds to any and every call for information. Your duties, gentlemen, have been more arduous in some respects than those of any of your predecessors, and I think I can truly say that the interests of the city have not suffered at your hands. In passing upon the numerous and varied questions which come before the government of a large city like this, it is to be expected that decided differences of opinion will be developed, and members have done no more than their duty in earnestly advocating the adoption of those measures which they honestly believed would result in advancing the welfare of the city.

The times have not been favorable to the inauguration of any new enterprises except those clearly demanded by the growth of the city, and it is to the credit of this Board that no measures have received its approval unless they could bear the test of full and free discussion. Many important improvements, which were begun in 1873, have been completed during the past year. The new portion of Washington street, between Cornhill and Haymarket square, and the numerous streets, places and squares on the "Burnt District" have been paved and opened to public travel. The improvement of the Northampton-street District, by raising the grade so as to secure proper drainage, has been substantially completed, at comparatively small expense to the city, and in a manner highly creditable to those who had charge of the work. This improvement, taken in connection with the extension of Swett street across South Bay, will encourage the owners of the unoccupied lands and flats in that vicinity to utilize their property, and the city will in this way find its compensation for all the expenses which have been incurred.

The last and most important act of the government has been the adoption of the scheme for procuring a permanent supply of

pure water from Sudbury river. No question has ever received a more careful and thorough examination on the part of the city authorities than this one, and I believe that the action which has been taken will be fully justified by the results. There are many other matters concerning the welfare of the city which have been acted upon during the past year, but I will not occupy your time by commenting upon them now.

I thank you most sincerely, gentlemen, for the kind expressions of respect and esteem contained in the resolution which you have adopted, and I beg to assure you that I fully reciprocate them.

I await your further pleasure.

Alderman POWER then offered the following: —

Ordered, That the final proceedings of the Board, together with the Address of the Chairman, be printed for the use of the members of the government. Passed.

On motion of Alderman CUTTER, the Board adjourned *sine die*.

